Public health risk assessment and interventions

Turkey: Earthquake

October 2011
Contents

Acknowledgements

1. Background and risk factors 6

2. Immediate public health risks 7

3. Priority interventions 12

4. Staff Health 13

5. WHO-recommended case definitions 14

6. Information sources 16
Acknowledgements

This public health risk assessment was compiled by the Disease Control in Humanitarian Emergencies (DCE) Unit in the Health Security and Environment cluster (HSE) at WHO/HQ, the departments of Communicable Disease Surveillance and Response, and Emergency and Humanitarian Action in the WHO Regional Office for Europe, and the WHO Country Office of Turkey.

The risk assessment was developed by the Communicable Diseases Working Group on Emergencies (CDWGE) at WHO headquarters. The CD-WGE provides technical and operational support on communicable disease issues to WHO regional and country offices, ministries of health, other United Nations agencies, and nongovernmental and international organizations. The Working Group includes the departments of Global Alert and Response (GAR), Food Safety, Zoonoses and Foodborne Diseases (FOS), Public Health and Environment (PHE) in the Health Security and Environment (HSE) cluster; the Special Programme for Research and Training in Tropical Diseases (TDR); the Global Malaria Programme (GMP), Stop TB (STB), HIV/AIDS and Control of Neglected Tropical Diseases in the HTM cluster; Health Statistics and Informatics (HIS) in the Information, Evidence and Research (IER) cluster; the department of Country Focus (CCO) in the Partnerships and UN Reform (PUN) cluster; the departments of Maternal, Child and Adolescent Health (MCA), Reproductive Health and Research (RHR), Immunizations, Vaccines and Biologicals (IVB) in the Family, Women's and Children's Health (FWC) cluster; Violence and Injuries Prevention (VIP) and Nutrition for Health and Development (NHD) and Chronic Diseases Prevention and Management (CHP) and Mental Health and Substance Abuse (MSD) in the Noncommunicable Diseases and Mental Health (NMH) cluster; Clinical Procedures unit of Essential Health Technologies, (CPR/EHT) in HSS cluster, Health and Medical Services (HMS) and Security Services (SEC) in the General Management (GMG) cluster; and the departments of Polio (POL) and Emergency Risk Management and Humanitarian Response (ERM) in the Polio, Emergencies and Country Collaboration (PEC) cluster.

DCE thanks the current and previous collaboration and input of the disease-specific focal points of the CD-WGE, the WHO Regional Office for Europe and the WHO Country Office of Turkey, the Ministry of Health, Turkey and all of whom have made the production of this risk assessment possible.

DCE also gratefully acknowledges the Office of Foreign Disaster Assistance (OFDA) of the United States Agency for International Development (USAID) and the Department of Foreign Affairs and International Trade (DFAIT) of Canada, for their support in the development of this document.
Preface

The purpose of this public health risk assessment is to provide health professionals from national and local authorities, in United Nations agencies, nongovernmental organizations, international and local organizations, and donor agencies currently working with populations affected by the emergency in Turkey, with up-to-date technical guidance on the major public health threats faced by the earthquake-affected population.

The topic areas addressed have been selected on the basis of the burden of morbidity, mortality and potential for increase in the area.

Public health threats represent a significant challenge to those providing health-care services in this evolving situation. It is hoped that this risk assessment will facilitate the coordination of activities between all agencies working among the populations currently affected by the crisis.
1. BACKGROUND AND RISK FACTORS

1.1 Event description

On 23 October 2011, at 13:41 local time (GMT 10:41hrs) an earthquake measuring 7.2 on the Richter Scale occurred in Eastern Turkey. The epicenter was in the village of Tabanli, in the eastern province of Van. The hardest-hit area was the city of Erciş (population approximately 77 000). The city of Van, about 100 kilometers south of Erciş, also sustained substantial damage.

This was the largest earthquake to have occurred in Turkey in the past decade. It has inflicted significant damage to critical infrastructure including basic utilities (power, water and sanitation), transport and communication networks as well as health facilities. Reports indicate about 3 000 damaged buildings including apartment blocks in the Erciş area. Van province has previously experienced two other major earthquakes (in 1976 and 1992), and aftershocks and subsequent landslides have been known to occur.

Casualty figures from the Office of the Prime Minister of Turkey, Disaster and Emergency Management Presidency indicate significant injury and loss of life – 601 deaths and more than 4 000 injuries, as of 31 October. It is currently difficult to estimate how many people have been displaced and the situation is likely to evolve in the coming weeks. Up to date information on the impact of the earthquake can be accessed on the Government of Turkey website¹ and Relief Web².

Turkey has an effective national capacity in place to respond to disasters. Search and rescue teams have been deployed and emergency centres offering temporary shelter and healthcare have been established by the national authorities. Additional support has been requested from international partners. In the health sector, Turkey has recently conducted an assessment of the health systems preparedness, the results of which were published early in 2011³.

1.2 Country context

Turkey has a total land area of 779 452 square kilometres. It is located at the cross-roads of Europe, Asia and the Middle East. Turkey shares a border with nine countries (Armenia, Azerbaijan, Bulgaria, Cyprus, Georgia, Greece, Islamic Republic of Iran, Iraq and the Syrian Arab Republic), and has a coastline of around 1 595 kilometres along the Mediterranean Sea and 1 577 kilometres along the Black Sea (see Fig 1). Turkey is ranked 83rd out of 169 countries on the 2010 Human Development Index⁴.

The country is divided into 81 provinces, each province is sub-divided into districts of which there is a total of 923. The estimated population of Turkey in 2009 was 72.6 million people; it is the third most populous country in the WHO European Region. Eighteen provinces have populations that exceed 1 million inhabitants, including Van province which was affected by the earthquake (approximately 1.04 million). Records indicate that 71% of the Turkish population live in urban centres such as Ercis in Van province, the city most affected by the earthquake (population approximately 77 000).

Over the past 10 years Turkey has invested significantly in the health sector through its Health Transformation Programme, which has resulted in major improvements in health-service delivery and in the general health of the population. This investment is now reflected in some of the key health indicators (Table 1).

---

¹ http://www.afad.gov.tr/Ingilizce_Site/index.html
² http://reliefweb.int
⁴ UNDP Human Development Report 2010
Table 1. Key health indicators, Turkey

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009&lt;sup&gt;5&lt;/sup&gt;</th>
<th>2010&lt;sup&gt;6&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy at birth</td>
<td>71.9 (2008)</td>
<td>74.3</td>
</tr>
<tr>
<td>Infant mortality</td>
<td>10.1/1000 live births</td>
<td>10.1/1000 live births</td>
</tr>
<tr>
<td>Under 5 mortality</td>
<td>13/1000 live births</td>
<td>13/1000 live births</td>
</tr>
<tr>
<td>Maternal mortality</td>
<td>18.4/100,000 live births</td>
<td>16.4/100,000 live births</td>
</tr>
</tbody>
</table>

Turkey is now entering the winter season and night temperatures of below zero have already been recorded in the earthquake-affected areas, with rainfall and cold weather forecast.

Fig 1. Map of Turkey showing the epicentre of the earthquake of 23 October 2011

2. IMMEDIATE PUBLIC HEALTH RISKS

Immediate risks for the affected people are related to physical injuries and psychological trauma from the impact of the earthquake itself, lack of shelter, and exposure to the cold and damp weather conditions with the onset of the winter season. The nature of the public health risks over the course of days to weeks will depend on how quickly the affected population is able to access basic needs and health-care services and how many people are displaced from their homes and the conditions in which they seek temporary accommodation.

Immediate health priorities include search and rescue for survivors trapped beneath the rubble, providing surgical/medical services to treat injured survivors, preventing wound infection, and providing adequate shelter, food, clean water and sanitation, in order to prevent increased incidence of communicable diseases such as diarrhoea and acute respiratory infections.

---

5 HFA WHO/Europe statistics;
6 Turkey health-statistics-yearbook 2010
2.1 Wounds, injuries and emergency surgical care

**Wounds and Injuries.** The availability of health services including surgical services, is critically important to ensure treatment for both urgent and non-urgent injuries to save lives and prevent disability. The majority of those injured are likely to have minor cuts and bruises, however, a significant percentage will require surgery, blood transfusion and other intensive treatment. Numerous serious injuries could potentially overwhelm existing treatment capabilities, especially if lack of access to some areas impedes the distribution of supplies.

Risk of **wound infection** and **tetanus** may be a problem if access to health facilities is difficult and the presentation of acute injuries is delayed. Waning tetanus immunity in adults increases the likelihood of morbidity and mortality from tetanus. **Gangrene** is a complication of wound contamination, and prompt wound treatment is critical for its prevention. Gangrenous wounds should be managed aggressively, with surgical removal of gangrenous tissue. There is no risk of transmission of gangrene to unaffected persons.

2.2 Water/sanitation/hygiene-related and foodborne diseases

Data from 2008, indicate that nationally 99% of the population had access to improved water supply and 90% to improved sanitation facilities, dropping to 75% in rural areas. However, with the collapse of infrastructure and disrupted power supply, the affected population is now at potential risk from disease outbreaks related to reduced access to safe water, sanitation, hygiene facilities and safe food. The population could be at risk of **hepatitis A** and **hepatitis E**.

Cholera, Typhoid fever and shigellosis are not endemic in Turkey.

2.3 Diseases associated with crowding

If displaced populations are housed in large (>1000), crowded transit camps or locations for extended periods, the risk may increase of transmission of certain communicable diseases that are spread from person to person through respiratory droplets. This increased risk is due to inadequate ventilation and the approach of the winter season, with sub-zero temperatures already recorded. Overcrowding can also increase the likelihood of transmission of waterborne and vector-borne diseases.

**Acute respiratory infections.** ARIs include any infection of the upper or lower respiratory tracts. Children under five, of low birth weight, malnourished or non-breastfed, as well as those living in overcrowded conditions are at higher risk of acquiring pneumonia. Infants of less than six months of age, who are not breastfed, have an increased risk of dying from pneumonia that is five times higher than in infants who are exclusively breastfed for the first six months.

**Tuberculosis (TB)** remains an important cause of morbidity and mortality. In 2009, the estimated number of new sputum positive TB cases was 17 402 with an incidence of 23.3/100 000 population.

The case fatality rate from laboratory confirmed TB was 2.9% in 2008. The estimated prevalence of multi-drug resistant TB (MDR) among all new cases was 2.7%.

Turkey has adopted the DOTS strategy, with services in 100% of the districts. The WHO global target of a treatment success rate of at least 85% has been achieved (treatment success rate 91.6% in 2008).

In the acute phase of this emergency, potential interruption of treatment regimes for all chronic diseases (including TB, HIV, diabetes, etc.) and loss of patient follow-up are likely to be significant problems. It is therefore essential that good collaboration takes place between health workers responding to the emergency and the established national TB control services. Pages 95 to 97 of the guideline *TB care and control in refugee and displaced populations* highlight the TB control issues that should be considered in situations of acute emergencies.

---

8 ECDC, WHO Regional Office for Europe, “Tuberculosis Surveillance in Europe 2009”
**Influenza** will remain a risk since influenza community transmission is expected in the coming months in Turkey and in the neighbouring countries as the winter season in the northern hemisphere begins. At present, no viruses have yet been detected as circulating in Turkey this season (EuroFlu Report)\(^9\). Influenza activity in Europe and the Middle-East remains relatively quiet at present. There have only been sporadic cases of influenza A(H3N2), pandemic influenza A(H1N1)pdm09 and influenza B over the past two weeks. The influenza viruses currently circulating globally are influenza A(H1N1)pdm09, A(H3N2) and influenza B. Influenza is transmitted from person to person through exposure to infected droplets expelled by coughing or sneezing or via contaminated hands or surfaces. Populations most at risk for severe disease are the very young, people >65 years of age, those with underlying chronic conditions and pregnant women. Vaccination with seasonal influenza vaccine is the best prevention.

Of note: in 2006 human cases of H5N1 infection were reported from this area of Turkey. The last reported outbreaks of H5N1 in poultry in Turkey occurred in the first quarter of 2008, in backyard poultry in Zonguldak, Sinop, Edime, Samsun and Sakarya provinces\(^10\). Close proximity to infected birds and poultry is a risk factor for the transmission of H5N1 to humans. The combination of destroyed and temporary housing after the earthquake, the seasonal winter weather and the desire to protect poultry from the weather by bringing them indoors in close proximity to humans should be weighed against this risk.

**Meningococcal disease** is spread from person to person through respiratory droplets from infected people. Transmission is facilitated by close contact and crowded living conditions. However, the risk of meningitis remains low in Turkey.

### 2.4 Vaccine-preventable diseases and routine immunization coverage

The risk of outbreaks of vaccine-preventable diseases is currently low. However, prolonged stay in overcrowded temporary shelters and prolonged disruption in routine immunization services may increase the risk of outbreaks of measles, pertussis and diphtheria.

**Tetanus** has a high case-fatality rate of 70–100% without medical treatment and is globally under-reported. Even though reports from the national authorities, WHO and UNICEF indicate a 97% diphtheria-tetanus-pertussis, 3rd dose (DTP3) coverage (2010) among one-year-old children in Turkey, isolated cases are to be expected, as has been seen in other crises.

Appropriate management of the injured should be implemented as soon as possible to minimize future disability and to avert avoidable deaths. All wounds and injuries should be scrutinized as *Clostridium tetani* spores that are present in the soil can infect trivial, unnoticed wounds and lacerations. The incubation period of tetanus is usually three to 21 days.

**Measles, diphtheria, pertussis** and **polio**. Immunization coverage reported by the national authorities and estimates by WHO and UNICEF indicate 97% coverage for measles among two-years-old children; 97% for diphtheria-tetanus-pertussis and polio among one-year-old children. The last indigenous polio case in Turkey (and in the WHO European Region) was reported in 1998. The Region has been polio-free since 2002. No cases of polio were detected in Turkey during the Tajikistan poliomyelitis importation outbreak of 2010, which affected three other countries of the WHO EURO Region\(^11\).

---

\(^10\) [www.kusgribi.gov.tr](http://www.kusgribi.gov.tr)
\(^11\) WHO Europe, Vaccine Preventable Infections Unit
Table 2. Routine vaccination coverage in Turkey in 2010

<table>
<thead>
<tr>
<th>Antigen</th>
<th>% coverage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG (Bacille Calmette–Guérin)</td>
<td>97</td>
</tr>
<tr>
<td>DaPT (DPT+HIB+IPA), 3rd dose</td>
<td>97</td>
</tr>
<tr>
<td>MCV (Measles-containing vaccine)</td>
<td>97</td>
</tr>
<tr>
<td>CPV (Conjugetet Pneumococcal Vaccination)</td>
<td>95</td>
</tr>
</tbody>
</table>

* Turkey Health Statistics Yearbook, 2010

2.5 Mental health and psychosocial support

Many people in the affected population are likely to be burdened by a wide range of symptoms of distress caused by continuing danger, loss, trauma, and changed or uncertain social conditions. It is important for health services to differentiate between normal psychological distress and moderate or severe mental disorders. Normal psychological distress may be reduced through psychological first aid and other non-clinical psychosocial interventions. However, moderate or severe mental disorders require clinical treatment in addition to psychosocial support. Continued access to care should be assured for people with severe mental disorders.

2.6 Vector-borne diseases and zoonotic diseases

**Malaria.** The number of malaria cases in Turkey and their active foci has decreased dramatically in recent years. The main parasite in Turkey is *Plasmodium vivax* and occurs seasonally from June to October\(^{12}\). No new case of *Plasmodium vivax* malaria has been reported in 2011. As the earthquake-affected areas are situated at a high altitude and with the onset of winter, there no risk of malaria in the affected area.

**Crimean Congo haemorrhagic Fever.** In Turkey, Crimean-Congo haemorrhagic fever (CCHF) occurs particularly in the north-eastern part of Anatolia from March to October\(^ {13}\). However, vectors of CCHF are not found in the earthquake-affected areas because of the high altitude, and therefore there is no risk of CCHF in the affected areas.

**West Nile virus infection.** Although information about the epidemiology of flavivirus infections in Turkey is limited, vector activity has been shown to be present for most of the medically-important flaviviruses. Nine laboratory confirmed cases of WNV infection with three fatalities were reported by Turkey in 2010\(^ {14}\). The risk of WNV is low at this time of the year with the onset of winter.

**Dengue haemorrhagic fever; plague.** There is no risk in Turkey.

**Rabies.** Based on recent data, the risk of rabies in Turkey is currently very low.

2.7 Other public health risks and considerations

**Dead bodies.** It is important to convey to all parties that corpses do not represent a public health threat. When death is due to the initial impact of the event and not because of disease, the presence of dead bodies has not been associated with outbreaks of disease. Standard infection control precautions and culturally sensitive burial practices are recommended for those managing corpses. (For additional information, see section 6 Management of dead bodies).


\(^{13}\) [http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19504](http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19504)

Reproductive health concerns include access to basic and comprehensive emergency obstetric care (EmOC), prevention and management of the consequences of sexual violence, reducing transmission of HIV, treatment of sexually transmitted infections, and availability of contraceptives to meet demand. The Minimal Initial Service Package (MISP) for reproductive health is a priority set of life-saving activities to be implemented at the onset of an emergency, including critical components for meeting these needs.

Noncommunicable diseases (NCDs) are recognized as an important health concern in Turkey. Diseases of the circulatory system (39.9%), malignant neoplasms (20.7%) and diseases of the respiratory system (8.9%) were the top three causes of hospital deaths in Turkey in 2009. This group of diseases places a substantial burden on health services and an impoverishing drain on families and communities. In the acute phase of this emergency, the potential interruption of treatments for all chronic diseases (including diabetes, hypertension, TB, HIV, etc.) and loss of patient follow-up is likely to be a significant problem. The priorities during the acute phase of this emergency are to treat exacerbations of these conditions and minimize treatment interruptions.

Malnutrition. The proportion of underweight children in Turkey is low at 3.5%; 42% of infants 0 to 6 months of age are exclusively breastfed for the first 6 months of life. It is important that appropriate and adequate food supplies are made available to vulnerable groups especially young children, pregnant and lactating women, and older persons.

Breastfeeding should be actively protected and promoted. Donations of infant formula and other breast-milk substitutes can increase morbidity and mortality in infants and young children and should be avoided. Targeting, use, procurement, management and distribution of these products should be strictly controlled, based on technical advice, and should comply with the Operational Guidance on Infant feeding in Emergencies.

Environmental risks. Poor management of waste, including health-care waste, can potentially expose health-care workers, waste handlers, patients and the community at large to infection, toxic effects and injuries, and can increase the risk of polluting the environment. The possibility exists that toxic chemicals and chemical mixtures such as industrial chemicals, pesticides and petrol may have been released into the environment from damaged plants, warehouses, workshops, petrol stations or other facilities where chemicals are used and stored. Populations may potentially be exposed to these chemicals directly in the short-term (e.g. release of gas) or indirectly via multiple exposure pathways in the long-term (e.g. chemicals polluting soil and surface water to be found in food and drinking-water).

Asbestos cement is a widely used building material, particularly for roofing sheets and large pipes. Damage to asbestos cement may result in the release of respirable asbestos fibres which can cause lung damage, mesothelioma and other cancers many years later. During the clear-up of damaged buildings there may be a need to handle, break up and dispose of asbestos-containing materials, with the risk that respirable fibres will be released. Trained personnel should examine sites where there is damaged asbestos cement and make recommendations for its safe removal. Children should be kept away. Adequate protective clothing should be provided to workers involved in the clear-up of this material and efforts made to reduce the generation and dispersal of asbestos fibres e.g. by keeping the material wet and well-covered. It should be disposed of in specially designated waste sites (See section 6, Environmental Health in Emergencies).

Carbon monoxide poisoning is a risk if petrol-driven generators are used in enclosed spaces. Care should be taken to ensure adequate ventilation wherever generators are used.

Drug and equipment donations. Inappropriate donations of medicines, medical equipment and medical supplies can be minimized by donors adhering to the interagency guidelines (for additional information, see section 4, Drug donations). In general, donated drugs and medical equipment should explicitly address expressed official needs, and should be discussed with the national health authorities before being dispatched (for additional information, see section 4, Drug donations).

15 http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=10711
16 http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf
17 http://www.eonline.net/resources/6
In general, the key principles are:

- donated drugs must be on the national list of registered drugs;
- donated drugs must be labelled in English or the national language;
- the date of expiration of the drugs must be no less than one year from arrival in the country.

### 3. Priority interventions

- Access to surgical, medical and emergency obstetric care in the earthquake zones, and proper case management with relevant medicines and supplies, particularly for trauma and wounds
- Establish triage, referral systems and medical evacuations
- Maintenance of basic health services including immunization, and continuity of treatment for chronic diseases (e.g. diabetes, hypertension, TB and HIV)
- Establishment/activate of an early warning alert and response network (EWARN) system for public health surveillance and response, including preparedness for epidemic-prone diseases
- Support for appropriate infant and young child feeding, including provision of complementary food for children under 2 years old; and supplementation for pregnant and lactating mothers
- Mass vaccination against a specific antigen is not currently recommended. However, restoration of routine immunization services should be ensured as soon as feasible in areas where immunization is not currently provided
- Provision of sufficient and safe water, adequate sanitation and hygiene facilities
- Appropriate management of waste, including medical waste at health-care facilities
- Adequately sized and ventilated shelter for the displaced population
- Public health communication
4. **Staff health**

**Vaccinations recommended for staff deployed to Turkey**

Emergency settings differ vastly in their nature but also by epidemiological context. It is thus essential that medical preparation is as comprehensive as possible (with the limitations imposed by departure at short notice) and tailored specifically for Turkey.

A minimum period is needed to build up protective levels of antibodies after immunization, and in some cases may require several injections. If possible vaccinations should be received 2 weeks in advance of departure (see table below). In the event of immediate departure, the duration of the mission may influence the choice of vaccines.

Basic knowledge on First Aid and in managing stress is important. Even if this is not always avoidable, good preparation can help to prevent and limit stress. (For additional information, see section 6, *Travel advice*).

**A. Vaccination recommendations**

<table>
<thead>
<tr>
<th>Vaccines strongly recommended</th>
<th>Validity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetanus</td>
<td>10 years</td>
<td>In this context, a booster dose is recommended after 5 years along with diphtheria.</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>10 years</td>
<td>Can be combined with tetanus.</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>3 months with one dose (5-8 years with two doses)</td>
<td>Vaccinate if there is no proof of immunity by vaccine or illness, even if departure at short notice. Can be combined with Hepatitis B.</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>Life</td>
<td>Provided complete course given.</td>
</tr>
<tr>
<td>Influenza vaccine</td>
<td></td>
<td>Seasonal influenza vaccine composition should include pandemic (H1N1) 2009 virus, Influenza A (H3N2) and Influenza B virus strains.</td>
</tr>
<tr>
<td>Measles</td>
<td></td>
<td>Potential risk in emergency. If not fully immunized in childhood, obtain vaccination.</td>
</tr>
</tbody>
</table>

NB: A yellow fever vaccination certificate is required from travelers coming from infected areas

**B. Other precautions**

Teams should be prepared to be completely self-sufficient, including:

- Medical kits including chlorine tablets for water purification
- PEP kit
- Surgical masks
- Gloves
- Food and water: given that there may be shortages of basic food and drinking water.
- Tents
- Personnel equipment (torches etc)
- Adequate supplies of personnel medications.

The information given above may need to be updated given the evolving situation in Turkey.
5. WHO-RECOMMENDED CASE DEFINITIONS

**ACUTE DIARRHOEA**
Acute diarrhoea (passage of 3 or more loose stools in the past 24 hours) with or without dehydration.

**SUSPECTED CHOLERA**
- **In an area where cholera is not known to be present:** a person aged >5 years with severe dehydration or death from acute watery diarrhoea with or without vomiting.
- **In an area where there is a cholera outbreak:** a person aged >5 years with acute watery diarrhoea with or without vomiting.

**To confirm a case of cholera:**
Isolation of *Vibrio cholera* O1 or O139 from a diarrhoeal stool sample.

**BLOODY DIARRHOEA**
Acute diarrhoea with visible blood in the stool.
**To confirm a case of epidemic bacillary dysentery:** take a stool specimen for culture and blood for serology; isolation of *Shigella dysenteriae* type 1.

**ACUTE FLACCID PARALYSIS (SUSPECTED POLIOMYELITIS)**
Acute flaccid paralysis in a child aged <15 years, including Guillain–Barré syndrome, or any acute paralytic illness in a person of any age in whom poliomyelitis is suspected.

**ACUTE JAUNDICE SYNDROME**
Illness with acute onset of jaundice and absence of any known precipitating factors and/or fever.

**ACUTE LOWER RESPIRATORY TRACT INFECTIONS/ PNEUMONIA IN CHILDREN AGED <5 YEARS**
- **Cough or difficulty breathing**
- **Breathing 50 or more times per minute for infants aged 2 months to 1 year**
- **Breathing 40 or more times per minute for children aged 1 to 5 years**
- **No chest indrawing, no stridor, no general danger signs.**

*Note: Severe pneumonia = cough or difficulty breathing + one or more of the following* (inability to drink or breastfeed, severe vomiting, convulsions, lethargy or unconsciousness) *or chest indrawing or stridor in a otherwise calm child*.

**SARI**
An acute respiratory illness with onset during the previous 7 days requiring overnight hospitalization that includes:
- history of fever or measured fever of ≥ 38°C
- **Cough**
- **Shortness of breath or difficulty breathing**

**Influenza-like illness (ILI):**
An acute respiratory illness with onset during the last 7 days with measured temperature ≥ 38°C, and
- **Cough.**

---

**MEASLES**

Fever and maculopapular rash (i.e. non-vesicular) and cough, coryza (i.e. runny nose) or conjunctivitis (i.e. red eyes).

or

Any person in whom a clinical health worker suspects measles infection.

To confirm a case of measles:

Presence of measles-specific IgM antibodies.

**MENINGITIS**

*Suspected case*

Sudden onset of fever (>38.5 °C) with stiff neck.

In patients aged <12 months, a suspected case of meningitis occurs when fever is accompanied by a bulging fontanelle.

*Probable case of bacterial meningitis*

Suspected case of acute meningitis, as defined above, with turbid cerebrospinal fluid.

*Probable case of meningococcal meningitis*

Suspected case of meningitis, as defined above and gram stain showing gram-negative diplococcus or ongoing epidemic or petechial or purpurral rash.

*Confirmed case of meningococcal meningitis*

Suspected or probable case, as defined above, with either positive-CSF antigen detection for *Neisseria meningitidis* or positive CSF culture or blood with identification of *N. meningitidis*.

**TETANUS**

*Adult tetanus*

Either of the following signs 3–21 days following an injury or wound:

- trismus of the facial muscles or risus sardonicus
- painful muscular contractions.

*Neonatal tetanus*

Any neonate with normal ability to suck and cry during the first 2 days of life who, between day 3 and day 28, cannot suck normally, or any neonate who becomes stiff or has spasms or both.

**UNEXPLAINED FEVER**

Fever (body temperature >38.5 °C) for >48 hours and without other known etiology.

**UNEXPLAINED CLUSTER OF HEALTH EVENTS**

An aggregation of cases with similar symptoms and signs of unknown cause that are closely grouped in time and/or place.
6. INFORMATION SOURCES

WHO headquarters/ Regional Office for Europe (EURO)
WHO
http://www.who.int/ar/
http://www.who.int/fr/
http://www.who.int/en/
http://www.euro.who.int/en/home

Disease control in humanitarian emergencies (DCE), WHO/HQ
http://www.who.int/diseasecontrol_emergencies/en/

Health Action in Crises (HAC), WHO/HQ
http://www.who.int/hac/en/

Emergencies - Disaster Preparedness and Response (DPR WHO Europe)
http://www.euro.who.int/data/assets/pdf_file/0005/141557/e94988.pdf

Situational updates
MOH Turkey
http://www.afad.gov.tr/Ingilizce_Site/index.html
http://www.saglik.gov.tr/
Reliefweb
http://reliefweb.int/node/454898
WHO Turkey
http://www.euro.who.int/en/where-we-work/member-states/turkey
WHO - EURO
http://www.euro.who.int/en/home
WHO HQ
http://www.who.int/hac/en/
OCHA
http://ochaonline.un.org/

Child health in emergencies
Emergencies documents
IMCI Documents
Acute respiratory tract infections in children
http://www.who.int/fch/depts/cah/resp_infections/en/
Child and Adolescent Health and Development (CAH), EURO

Diarrhoeal diseases
Key documents and position papers under
http://www.who.int/cholera/publications/en/
Position paper: Prevention and control of cholera outbreaks: WHO policy and recommendations
WHO position paper on Oral Rehydration Salts to reduce mortality
WHO position paper on cholera vaccine use
http://www.who.int/cholera/CholeravaccineuseinIraqpositionpaper051007.pdf
Acute diarrhoeal diseases in complex emergencies: critical steps.
http://www.who.int/cholera/publications/critical_steps/

Cholera outbreak: assessing the outbreak response and improving preparedness
http://www.who.int/cholera/publications/cholera_outbreak/

First steps for managing an outbreak of acute diarrhoea.
http://www.who.int/cholera/publications/first_steps/

Guidelines for the control of shigellosis, including epidemics due to Shigella dysenteriae type 1
http://www.who.int/cholera/publications/shigellosis/


Background document: the diagnosis, treatment, and prevention of typhoid fever (WHO, 2003) [pdf-230kb]
http://whqlibdoc.who.int/hq/2003/WHO_V&B_03.07.pdf

Drug donations
Guidelines for Drug Donations (WHO, revised 1999) [pdf-270kb]
http://www.who.int/selection_medicines/emergencies/guidelines_medicine_donations/en/
http://apps.who.int/medicinedocs/pdf/whozip53f/whozip53f.pdf

Environmental health in emergencies
http://www.who.int/water_sanitation_health/hygiene/emergencies/en/

Asbestos-hazards and safe practices for clean-up after earthquake

Food safety
Ensuring food safety in the aftermath of natural disasters
http://www.who.int/foodsafety/foodborne_disease/emergency/en/

Foodborne disease outbreaks: guidelines for investigation and control
http://www.who.int/foodsafety/publications/foodborne_disease/fdbmanual/en/

5 Keys to safer food: simple advice to consumers and food handlers
http://www.who.int/foodsafety/consumer/5keys/en/index.html

Guideline for the safe preparation, storage and handling of powdered infant formula (WHO, 2007)

Gender & Gender-based violence (see also Sexual and Reproductive Health in Emergencies below)
IASC Guidelines for Gender-based Violence Interventions in Humanitarian Settings (2005) [pdf-1900kb]
Arabic, English, French, bahasa, Spanish


WHO/UNHCR Clinical management of rape survivors: Developing protocols for use with refugees and internally displaced persons. 2004 - Revised edition
http://www.who.int/reproductive-health/publications/clinical_mngt_rapesurvivors/
http://www.who.int/reproductivehealth/publications/emergencies/924159263X/en/
http://whqlibdoc.who.int/publications/2004/924159263X.pdf
Women's health in emergencies


WHO, UNHCR & UNFPA Clinical Management of Rape e-learning Programme (English and French)
Downloadable version (85 MB)
http://libdoc.who.int/hac/CMoR_CDDownloadMultilingualVersion.zip
Online version: http://iawg.net/cmor/

Hepatitis
Hepatitis A

Hepatitis E
http://www.who.int/csr/disease/hepatitis/whocdscsredc200112/en/
http://www.who.int/mediacentre/factsheets/fs280/en/

HIV/AIDS
Guidelines for addressing HIV in Humanitarian settings: Inter-Agency Standing Committee (IASC) guidelines (2009)
http://www.who.int/hac/techguidance/pht/IASCHIV2009En.pdf
http://www.euro.who.int/en/what-we-do/health-topics/communicable-diseases/hiv/aids
http://www.euro.who.int/en/what-we-do/health-topics/communicable-diseases/sexually-transmitted-infections

Infection prevention and control in health care
WHO Aide – mémoire: Standard Infection control precautions in health care, 2006

WHO Policy on TB Infection Control in Health-Care Facilities, Congregate Settings and Households, 2009


Influenza
http://www.who.int/csr/disease/influenza/en/

Injection safety (see also Patient safety below)
http://www.who.int/injection_safety/en/
http://www.who.int/injection_safety/Guiding_Principals_FR.pdf

Immunization, vaccines and biologicals
http://www.who.int/immunization/en/

Laboratory specimen collection
Guidelines for the collection of clinical specimens during field investigation of outbreaks (WHO, 2000)

Malnutrition
Communicable diseases and severe food shortage situations (WHO, 2005) [pdf-250kb]
http://www.who.int/diseasecontrol_emergencies/guidelines/Severe_food_shortages.pdf

The management of nutrition in major emergencies.(WHO, 2000) [pdf-12 800kb]
Infant and Young Child Feeding in Emergencies. Operational guidance for emergency relief staff and programme managers (IFE, 2007) [pdf-870kb]
  http://www.ennonline.net/resources/6

IFE Orientation Package (2010)
  http://www.ennonline.net/ife/orientation

IASC Cluster module 17 on IFE

Guide for the media on IFE (Arabic)

Guidelines for the inpatient treatment of severely malnourished children (WHO, 2003) [pdf-400kb]
  http://www.who.int/nutrition/publications/guide_inpatient_text.pdf

Management of the child with a serious infection or severe malnutrition: guidelines at first referral level in developing countries (WHO, 2000)
  http://whqlibdoc.who.int/hq/2002/WHO_FCH_CAH_00.1_fre.pdf

Nutrition in emergencies publications
  http://www.who.int/topics/nutrition/publications/emergencies/en/

Nutrition, EURO
  http://www.euro.who.int/en/what-we-do/health-topics/disease-prevention/nutrition

Management of dead bodies
Management of dead bodies after disasters: a field manual for first responders (PAHO, 2006) [pdf-1100kb]

Management of dead bodies in disaster situations (WHO, 2004)

Measles
  http://whqlibdoc.who.int/hq/2004/WHO_V&B_04.03.pdf
  http://www.unicef.org/publications/index_19531.html

WHO Measles Vaccine Position paper
  http://www.who.int/immunization/wer7914measles_April2004_position_paper.pdf

Response to measles outbreaks in measles mortality reduction settings (This publication replaces "WHO Guidelines for Epidemic Preparedness and Response to Measles Outbreaks", May 1999.)

WHO measles information
  http://www.who.int/immunization/wer7914measles_April2004_position_paper.pdf

Measles fact sheet
  http://www.who.int/mediacentre/factsheets/fs286/en/

Vaccine Preventable Diseases and Immunization (VPI), EURO

Medical waste in emergencies
  http://www.who.int/water_sanitation_health/medicalwaste/emergmedwaste/en/

Guidelines for Safe Disposal of Unwanted Pharmaceuticals in and after Emergencies (WHO, 1999)

Four steps for the sound management of health-care waste in emergencies (WHO, 2005)

Meningitis
Mental health in emergencies


Mental health and Substance Abuse (MNH), EMRO http://www.emro.who.int/mnh/pdf


Patient safety (see also Injection safety above) http://www.who.int/patientsafety/en/

Polio


Rabies


WHO- Rabies page http://www.who.int/topics/rabies/en/

Sexual and Reproductive Health in Emergencies (see also Gender and Gender based violence above)

Inter-agency Field Manual on Reproductive Health in Humanitarian Settings http://www.iawg.net/resources/field_manual.html

Minimal Initial Service package (MISP) for Reproductive Health in Crisis Situations http://www.iawg.net/resources/MISP%20check%20sheet%2012%20%2017%20%2009_FINAL.pdf http://misp.rhrc.org/


Reproductive Health in Emergencies (general) http://www.iawg.net/


Risk communication


Specific messages:

Hand hygiene: http://www.who.int/gpsc/5may/How_To_HandWash_Poster.pdf


Preventing water-related diseases: http://www.who.int/features/qa/31/en/

Surgical care (see also Tetanus and Wounds and Injuries sections below)


Tetanus


WHO Position Paper on Tetanus Immunisation
http://www.who.int/immunization/wer8120tetanus_May06_position_paper.pdf

Travel advice
Guide on Safe Food for Travellers

International Travel and Health (2009)
http://www.who.int/ith/en/

Tuberculosis


World Health Statistics 2010

Water, Sanitation and Hygiene
Guidelines for drinking-water quality, third edition, incorporating first addendum

Environmental health in emergencies and disasters: a practical guide

WHO Technical notes for emergencies

Frequently asked questions in case of emergencies

Wounds and Injuries, Emergency Surgical Care (See also Tetanus above)
Prevention and management of wound infection [pdf-40kb]
http://www.who.int/hac/techguidance/tools/guidelines_prevention_and_management_wound_infection.pdf

Integrated Management of Emergency and Essential Surgical Care (IMEESC) tool kit

Best Practice Guidelines on Emergency Surgical Care in Disaster Situations [pdf-2254kb]
http://www.who.int/surgery/publications/BestPracticeGuidelinesonESCinDisasters.pdf

WHO generic essential emergency equipment list [pdf-111kb]

Zoonotic diseases
http://www.who.int/zoonoses/resources/en/