

Public health risk assessment and interventions

The Libyan Arab Jamahiriya: Civil unrest

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Organization**

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Preface

The purpose of this public health risk assessment is to provide health professionals in United Nations agencies, nongovernmental organizations, international and local organizations, donor agencies and local authorities, who are currently working with populations affected by the emergency in the Libyan Arab Jamahiriya, with up-to-date technical guidance on the major public health threats faced by the civilian population affected by the current civil unrest in the country.

The topic areas addressed have been selected on the basis of the burden of morbidity and mortality, as well as the potential for their increased risk in the affected 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

Recent events in north Africa and the Middle East have led to unrest in a number of countries across the region. In the Libyan Arab Jamahiriya, general unrest has resulted in disruption of social services. Mass population movements are occurring particularly among migrant workers from neighboring countries seeking repatriation.

At present, it is unclear how the current situation is likely to evolve, however the humanitarian community should anticipate further population displacement in the coming weeks.

This assessment of public health risks in the Libyan Arab Jamahiriya has focused on two distinct population groups, each with differing factors influencing risk of illness:

- the migrant workers, estimated to be approximately 1.5 million, who are now attempting to return to their home countries in large numbers, and
- the indigenous Libyan population.

Early media coverage of the populations affected by this event has focused primarily on migrant workers seeking repatriation. Estimates suggest approximately 1 million Egyptian, 80 000 Pakistani, 59 000 Sudanese, 50 000 Bangladeshi, 26 000 Filipino and 2 000 Nepalese migrant workers, as well as other nationalities from Africa and Asia migrant workers¹ are currently employed in the Libyan Arab Jamahiriya. Despite active and coordinated repatriation efforts, the massive influx into neighbouring countries has created bottlenecks on the borders due to delays in onward transportation of workers to their home countries. Repatriation activities have now increased, but given the uncertainties surrounding the situation, it is difficult to predict the number of people that will continue to cross the border in the coming days and weeks. As of 5 March, according to estimates from Egyptian and Tunisian authorities, over 200 000 people had left the Libyan Arab Jamahiriya, crossing the borders into Egypt and Tunisia; a further 3 000 have crossed the southern border into the Niger².

In particular, at the Ras Adjir border crossing between the Libyan Arab Jamahiriya and Tunisia, thousands are reported as trying to enter Tunisia, straining the capacity of Tunisian border authorities. At present, efforts by the Tunisian military and Government together with civil society and volunteer organizations, are able to meet the demand for food and water, but improved sanitation facilities are urgently needed. Mobile first aid medical facilities are available at the border crossing, a transit camp has been erected 5 km inside the Tunisian border and a referral system to four regional hospitals is functioning. As of 4 March 2011, the population of the border transit camp was reported to be up to 20 000, with an average length of stay of four days.³ In Tunisia, an emergency disease surveillance system has been established by the Ministry of Health with the support of WHO, to monitor the health status of the refugees from the Libyan Arab Jamahiriya, and to detect and control disease outbreaks.

Reports from the eastern part of the Libyan Arab Jamahiriya, including Benghazi indicate that the area is calm and aid agencies are present. A United Nations inter-agency rapid assessment mission is being mobilized to conduct a needs assessment in the east. The western part of the Libyan Arab Jamahiriya, however, remains inaccessible to aid agencies due to security concerns.

The major risks to public health among the indigenous Libyan and migrant populations, currently caught up in the unrest in the Libyan Arab Jamahiriya, are associated with the direct effects of the violence, lack of access to health care and interruptions in treatment of chronic disease. The risk of communicable disease transmission within these groups is currently low but dynamic, and will vary depending on the length of the crisis and the access to food, adequate shelter, water, sanitation, and basic health care.

¹ OCHA. Libyan Arab Jamahiriya, Situation Report No. 3, 2 March 2011

² OCHA. Libyan Arab Jamahiriya, Situation Report No. 6, 6 March 2011

³ Situation des réfugiés de Libye à la Frontière Tuniso-Libyenne Au 2 mars 2011. Ministère de la Santé Tunisien Communicable Disease Working Group on Emergencies (WHO/HQ) Communicable Disease Surveillance and Response (EMRO); WHO Office, the Libyan Arab Jamahiriya. *Public Health risk assessment and interventions: Civil conflict, the Libyan Arab Jamahiriya*

For both groups at risk, the immediate health priorities include provision of emergency medical and surgical care to the injured, food, shelter, adequate water and sanitation resources, and access to health care and basic medicines. Preparedness for outbreaks must also be a priority, particularly if the continued mass population movements result in overcrowded camp settings, with limited water and sanitation resources.

1.2 Country context⁴

The Libyan Arab Jamahiriya is located in north Africa on the southern coast of the Mediterranean sea between 18° and 33° north latitude and 9° and 25° east longitude. It has a total land area of 1 775 500 square kilometres, making it the third largest country in Africa. It shares a border with six African countries (Algeria, Chad, Egypt, the Niger, Tunisia and the Sudan) and has a coastline of around 1900 kilometres along the Mediterranean sea. (see Fig 1). The United Nations Development Programme lists the Libyan Arab Jamahiriya as 53rd out of 169 countries on the 2010 Human Development Index, as published in the UNDP Human Development Report 2010.

The main cities are located in the northern part of the country along the coastal area. The six largest cities are (in order of population size) Tripoli, Benghazi, Alzawia, Musrata, Derna and Sirte. The administrative system of the country is highly decentralized. The country is divided into 22 shabiats (districts); each shabiat consists of a number of people's congresses, and has functional secretariats responsible for planning, implementation, monitoring and evaluation of the health, education, economic sectors etc. A central coordination body is entrusted with consolidation of national plans, budgeting and reporting.

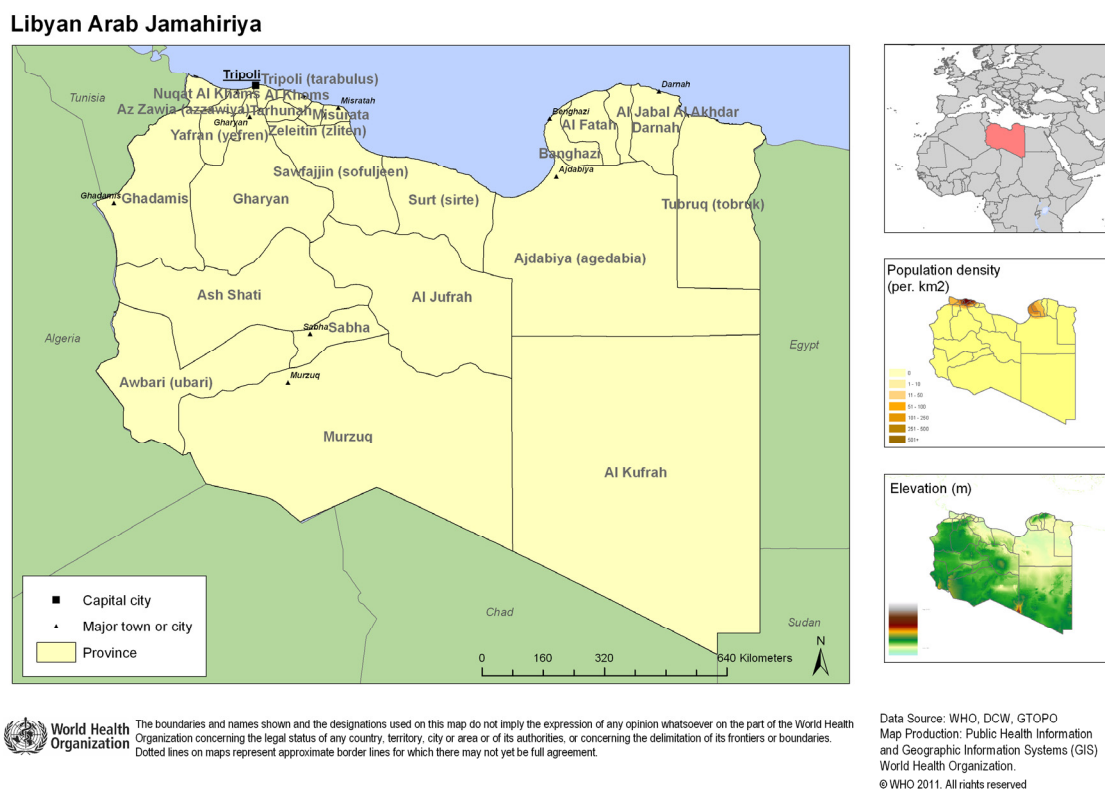
In 2010, the total estimated population of the Libyan Arab Jamahiriya was 6.5 million people, one of the lowest population density rates in the world. Density is divided into two distinct geographical areas: the northern part, which is relatively densely populated, housing 85% of the population on 10% of the land area; and the southern part, which is much less populated.

Over the past three decades the Libyan authorities have invested significantly in the health service, leading to major improvements in health-service delivery and in the general health of the population, as reflected in health indicators. However some significant challenges remain, most notably:

- absence of a national health information system and therefore lack of accurate health indicators concerning the causes of mortality and morbidity;
- increasing incidence of HIV/AIDS;
- increases in non-communicable diseases, such as cardiovascular disease, diabetes and cancer.

⁴ Abstracted from *Country Cooperation Strategy for WHO and the Libyan Arab Jamahiriya 2005–2009*. Communicable Disease Working Group on Emergencies (WHO/HQ) Communicable Disease Surveillance and Response (EMRO); WHO Office, the Libyan Arab Jamahiriya. *Public Health risk assessment and interventions: Civil conflict, the Libyan Arab Jamahiriya*

Fig 1. The Libyan Arab Jamahiriya



2. IMMEDIATE PUBLIC HEALTH RISKS

The nature and scale of the public health risks will be largely determined by the evolution of this crisis and will be dependent upon the demographics and location of the population groups affected.

The migrant workers currently fleeing the unrest are largely adult and male. They are likely to be relatively healthy and well vaccinated. Health risks among this group will depend on whether there are interruptions in the treatment of chronic conditions (both non-communicable, such as hypertension and diabetes, and communicable, such as TB and HIV/AIDS) and whether, once they reach the borders, they are located in overcrowded or unsanitary settings, without safe water or food, for an extended period, which will predispose them to infectious diseases (such as diarrhoea, acute respiratory infections, vaccine-preventable disease if they have not maintained their vaccination status). This population group is not currently reported as suffering from major injuries/wounds.

The population that is caught up in the conflict inside the Libyan Arab Jamahiriya, a mixture of both Libyan nationals and migrant workers, are at risk of serious injuries, wounds, medical and surgical conditions that require urgent attention, as well as interruption of treatment of chronic conditions. At present, there is no information on the status of access to health care, nor on disruptions in water/sanitation/food supplies in the western part of the country.

The following public health risks should therefore be considered separately, depending on which group is being addressed; the migrant population that is attempting to leave the Libyan Arab Jamahiriya, or the population that has remained in the country and is caught up in the unrest. The disease statistics provided relate to the indigenous Libyan population.

More detailed information is available in the references provided in Section 6 to complement the key messages highlighted.

2.1 Wounds, injuries and emergency surgical care

Wounds and injuries. Surgical services are critically important both for urgent and for non-urgent conditions to save lives and prevent disability. This is of particular importance for serious injuries and obstetrics emergencies. The majority of the injured are likely to have minor cuts and bruises; however, a significant percentage, particularly among those caught up in the unrest, will suffer from penetrating injuries from gun shots and shrapnel, requiring surgery, blood transfusion and other intensive treatment. The extent of serious injuries is likely to overwhelm existing treatment capacities, especially as access to some areas to provide supplies is restricted.

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. **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.

Waning tetanus immunity in adults increases the likelihood of morbidity and mortality from **tetanus**.

2.2 Water/sanitation/hygiene-related and foodborne diseases

Populations within the Libyan Arab Jamahiriya, as well as migrant populations that have fled the country, are at potential risk from outbreaks of diseases related to reduced access to safe water, sanitation, hygiene facilities and safe food. There is a risk of *Salmonella typhi* (causing **typhoid fever**), **hepatitis A** and **hepatitis E**. Cholera is not endemic in the Libyan Arab Jamahiriya. Diarrhoea is already a major contributor to under-five mortality; WHO estimates that diarrhoea accounts for 8% of under-five deaths in the Libyan Arab Jamahiriya.

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, such as **measles**, **diphtheria**, **influenza** and **pertussis** (see section below on vaccine-preventable diseases), and **acute respiratory infections (ARI)**. If ventilation is inadequate, this risk is increased. Overcrowding can also increase the likelihood of transmission of water-borne and vector-borne diseases.

Acute respiratory infections. ARIs include any infection of the upper or lower respiratory tracts. Acute lower respiratory tract infection (ALRI) (pneumonia, bronchiolitis and bronchitis) is a major concern in children under five. WHO estimated in 2000–2003 that 9% of under-five deaths in the Libyan Arab Jamahiriya were caused by pneumonia. Low birth weight, malnourished and non-breastfed children and 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 a risk of dying from pneumonia that is five times higher than in infants who are exclusively breastfed for the first six months.

Influenza. Influenza and influenza-like illnesses (ILI) including Severe Acute Respiratory Illness (SARI) will remain a moderate risk, as low to moderate levels of influenza activities may be present in the Libyan Arab Jamahiriya and in the neighbouring countries during the current winter season. Influenza caused by pandemic (H1N1) 2009 virus may be circulating with the possibility of co-circulation with influenza A (H3N2) and influenza B viruses. Pandemic (H1N1) influenza is transmitted from person to person as easily as normal seasonal influenza, by exposure to infected droplets expelled by coughing or sneezing or via contaminated hands or surfaces.

Meningococcal disease is spread from person to person through respiratory droplets from infected people. Transmission is facilitated by close contact and crowded living conditions. The Libyan Arab Jamahiriya is located north of the meningitis belt, and therefore at lower risk than neighbouring countries to the south, such as Chad and the Niger.

Tuberculosis (TB) is an important cause of morbidity and mortality in the Libyan Arab Jamahiriya. In 2009, the estimated number of new TB cases was 2600 with an incidence of 40 cases per 100 000 population.

Mortality rate from all forms of TB was 4.1/100 000 population in 2009. The estimated prevalence of multi-drug resistant TB (MDR) among all new cases was 2.6% (*WHO, TB country profile*). These numbers include TB patients among foreign workers.

The Libyan Arab Jamahiriya has adopted the DOTS strategy, with services extended to 100% of the districts. WHO global targets of at least 70% TB case detection rate have been met (detection rate 82% in 2008), however, targets for treatment success rates of at least 85% are yet to be achieved (treatment success rate 69% in 2008).

In the acute phase of this emergency, the potential interruption of treatments for all chronic diseases (including TB, HIV, diabetes, etc.) and loss of patient follow-up is likely to be a significant problem. TB treatment provision should be maintained in the health facilities that are functioning in the Libyan Arab Jamahiriya. TB treatment services should also be ensured for the migrant workers with TB who are leaving the country. It is therefore essential that strong collaboration is established 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 emergency situations.

2.4 Vaccine-preventable diseases and routine immunization coverage

The risk of outbreaks of vaccine-preventable diseases is currently low. However, a prolonged crisis with overcrowded conditions could disrupt immunization services, resulting in increased risk of outbreaks of measles, pertussis and diphtheria in the country.

Measles, diphtheria, pertussis and polio. Reports from the Libyan national authorities, WHO and UNICEF indicate 98% measles, diphtheria-tetanus-pertussis, and polio immunization coverage* among one-year-old children (2009) (see Table 1.). Over 2700 cases of measles were reported in 2004, this has decreased to 329 in 2009 with strengthened EPI. However the fact that cases are still occurring indicates that measles transmission in the Libyan Arab Jamahiriya is still ongoing despite very high reported immunization coverage. Polio has been eliminated in the Libyan Arab Jamahiriya (WHO EMRO, *VPI Unit*).

Tetanus, without medical treatment, has a high case-fatality rate of 70–100% and is under-reported globally. Even though reports from the national authorities, WHO and UNICEF indicate a 98% coverage of 3rd dose diphtheria-tetanus-pertussis (DTP3), in 2009, among one-year-old children in the Libyan Arab Jamahiriya. Nevertheless, isolated cases are to be expected as has been seen in other crises.

Appropriate management of injuries should be implemented as soon as possible to minimize future disability and to avert avoidable deaths in the ongoing civil strife. 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.

* The country carried out a catch-up campaign targeting children and adolescents aged 1–19 years of age from November 2007 to November 2008 with measles and rubella containing vaccine (MR). Reported administrative coverage was 103% with rapid coverage monitoring results reporting 94% coverage.

Table 1. Routine vaccination coverage at one year of age, 2009, the Libyan Arab Jamahiriya

Antigen	% coverage*
(BCG) bacille Calmette–Guérin	99
Diphtheria-tetanus-pertussis, 3rd dose	98
MCV (measles-containing vaccine)	98
Polio, 3rd dose	98

* Official country estimates reported to WHO/UNICEF, 2009

2.5 Vector-borne diseases and zoonotic diseases

Malaria. There is currently no malaria risk in the Libyan Arab Jamahiriya. Imported malaria has, at times, resulted in limited local transmission and was last reported in 2003.

Dengue. There is currently no risk of dengue haemorrhagic fever in the Libyan Arab Jamahiriya.

Rabies. Based on recent data, the risk of rabies in the Libyan Arab Jamahiriya is currently very low.

Plague. Scattered foci of enzootic plague exist across the country. The last outbreak of plague was reported in the Mediterranean coastal town of Tubruq in 2009, and included a cluster of 5 cases and 1 death. Population displacement in areas of known natural foci may increase the risk of exposure to rodent reservoirs of plague infection, increasing the risk of sporadic cases of plague.

2.6 Other public health risks and considerations

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 and includes critical components to meet these needs. In conflict or other insecure settings, referral and transport must be arranged in advance to ensure uninterrupted access to EmOC.

Noncommunicable diseases (NCDs) are recognized as an important health concern in the Libyan Arab Jamahiriya. Chronic conditions, including cardiovascular disease (hypertension, ischemic heart disease, cerebrovascular disease and heart failure), cancer, diabetes, chronic respiratory disease and neuropsychiatric disorders, account for an increasing proportion of the disease burden, although the prevalence data are not available. This group of diseases places a substantial burden on health services and is an impoverishing drain on families and communities. The priorities during the acute phase of this emergency are to treat exacerbations and minimize treatment interruptions.

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.

Malnutrition. The proportion of underweight children in the Libyan Arab Jamahiriya is 4.8% (2007). If the crisis is prolonged and there is a lack of access to appropriate and adequate food, including complementary foods, risk of malnutrition could increase for vulnerable groups such as young children, but also pregnant and lactating women and older persons.

The risk is likely to increase if there is lack of or inadequate support for mothers or caretakers to exclusively breastfeed for 6 months and to continue up to 2 years with for appropriate and safe complementary feeding. 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, should be based on technical advice, and should comply with the Operational Guidance on Infant feeding in Emergencies (2007).

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 as well as increasing the risk of polluting the environment.

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

Toxic agents and chemicals. There are declared stockpiles of bulk chemical agents in the Libyan Arab Jamahiriya which were in the process of being destroyed. The main storage location is in Rabta (70 miles south of Tripoli). According to OPCW, these stockpiles contain mustard gas. The Libyan Arab Jamahiriya has declared that all delivery munitions have been destroyed. Nevertheless, vigilance among health-care workers (HCW) should be maintained for early symptoms of exposure to chemical intoxication including risks of secondary contamination to both HCWs and other patients. Further information, including signs and symptoms of exposure, can be found in the reference under toxic agents and chemicals in Section 6.

Drug and equipment donations. Inappropriate donations of medicines, medical equipment and medical supplies can be minimized by adherence by donors to the interagency guidelines (for additional information, see section 6, Drug donations). In general, donated drugs and medical equipment should explicitly address expressed official needs, and should be discussed with National Health Authorities before sending (for additional information, see Section 6, *Drug donations*). 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. Specific priority interventions for immediate implementation

I. Health sector priorities

- Access to surgical, medical and emergency obstetric care in the conflict zones, and proper case management with relevant medicines and supplies, particularly for trauma and wounds.
- Triage, referral systems and medical evacuations.
- Maintenance of basic health services and continuity of treatment for chronic diseases (e.g. HIV, TB, hypertension, etc).
- Public health surveillance and response, including preparedness for epidemic-prone diseases.
- Support for appropriate infant and young child feeding, supplementation for pregnant and lactating mothers, and malnutrition management.
- Public health communication.

II. Non-health sector priorities impacting health

- Provision of sufficient and safe water.
- Provision of adequate sanitation and hygiene facilities.
- Provision of safe food including complementary food for children under 2 years of age.
- Adequately sized and ventilated shelter.

4. Staff health

Vaccinations recommended for staff deployed to the Libyan Arab Jamahiriya

Emergency settings differ widely in both their nature and in their 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 the Libyan Arab Jamahiriya.

A minimum period of time is needed to build up protective levels of antibodies after immunization, which may require several injections. If possible, vaccinations should take place 2 weeks in advance of departure (see table below).

Basic knowledge of first aid and stress management is important. Although increased stress is not always avoidable, good preparation can help to prevent high levels of stress and limit its impact. (For additional information, see section 6, *Travel advice*).

A. Vaccination recommendations

	Vaccine	Validity	Comments
Strongly recommended			
	Diphtheria	10 years	Can be combined with tetanus.
	Tetanus	10 years	Booster dose is recommended if not taken in the last 10 years
	Polio	10 years	
	Typhoid	3 years	
	Hepatitis A	Life	Recommended, if there is no proof of immunity by vaccine or illness, even if departure is at short notice. Can be combined with Hepatitis B.
	Hepatitis B	Life	Recommended, provided complete course is given.
	Measles		Recommended if not fully immunized in childhood, Potential risk in emergency situation.
Optional			
	Nm meningitis		Although the Libyan Arab Jamahiriya is not in the meningitis belt, staff may be deployed or evacuated elsewhere in the region. Chad is currently experiencing an ongoing outbreak.
	Influenza vaccine	1 year	Seasonal influenza vaccine as recommended for the northern hemisphere 2010-2011 season

NB: A yellow fever vaccination certificate is required for all travellers arriving from infected areas

B. Other precautions

Teams should be prepared to be completely self-sufficient and should be equipped with the following:

- medical kits
- 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.

Teams should be aware of how to access PEP in case of possible exposure to HIV and also be aware of all the relevant security/emergency numbers.

While there is no malaria transmission in the Libyan Arab Jamahiriya, staff are recommended to use protection against mosquito bites between dusk and dawn when staying overnight in southern areas of the Libyan Arab Jamahiriya experiencing increased levels of trans-Saharan migration. In the event that fever develops one week or more after entering the southern areas of the country and up to 3 months following

departure, medical attention should be sought and treating medical staff should be made aware of the (remote) possibility of malaria transmission.

The information given above may need to be updated given the evolving situation in the Libyan Arab Jamahiriya.

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 HAEMORRHAGIC FEVER SYNDROME

Acute onset of fever (duration of less than 3 weeks) and any of the following:

- haemorrhagic or purpuric rash
- vomiting with blood
- cough with blood
- blood in stools
- epistaxis
- other haemorrhagic symptoms.

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

and

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

and

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

MALARIA

Person with current fever or history of fever within the past 48 hours (with or without other symptoms such as nausea, vomiting and diarrhoea, headache, back pain, chills, muscle pain) with positive laboratory test for malaria parasites (blood film (thick or thin smear) or rapid diagnostic test).

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 purpurial 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/WHO Eastern Mediterranean Regional Office (EMRO)

WHO

<http://www.who.int/ar/>

<http://www.who.int/fr/>

<http://www.who.int/en/>

<http://www.emro.who.int/>

<http://www.emro.who.int/Arabic/>

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/>

Emergency and Humanitarian Action (EHA), WHO/EMRO

<http://www.emro.who.int/eha/>

Situational updates

OCHA

<http://ochaonline.un.org/>

Reliefweb

<http://www.reliefweb.int/rw/dbc.nsf/doc103?OpenForm>

MOH Tunisia

<http://www.santetunisie.rns.tn/msp/msp.html>

WHO - EMRO

<http://www.emro.who.int/index.asp>

WHO HQ

<http://www.who.int/hac/en/>

Child health in emergencies

Emergencies documents

http://www.who.int/child_adolescent_health/documents/emergencies/en/index.html

IMCI Documents

http://www.who.int/child_adolescent_health/documents/imci/en/index.html

Acute respiratory tract infections in children

http://www.who.int/fch/depts/cah/resp_infections/en/

Pocket book for hospital care for children (WHO, 2005)

http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html

Child and Adolescent Health and Development (CAH), EMRO

<http://www.emro.who.int/cah/index.asp>

Dengue

<http://www.who.int/topics/dengue/en/>

Dengue guidelines for diagnosis, treatment, prevention and control. (WHO 2009)

http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf

Guidelines for Dengue Surveillance and Mosquito Control, Second Edition, WHO Regional Office for Western Pacific Region, 2003

http://www.wpro.who.int/publications/pub_9290610689.htm

Update on the principles and use of rapid tests in Dengue WHO Regional Office for Western Pacific Region April 2009

http://www.wpro.who.int/internet/resources.ashx/MVP/Update+on+dengue+rapid+tests_15.04.09_final.pdf

Guidelines for treatment of dengue fever and dengue haemorrhagic fever in small hospitals, New Delhi, World Health Organization, WHO Regional Office for South-East Asia, 1999. [pdf-255 kb]

http://www.searo.who.int/LinkFiles/Dengue_Guideline-dengue.pdf

Dengue haemorrhagic fever (film): early recognition, diagnosis and hospital management an audiovisual guide for health-care workers responding to outbreaks. (English version)

http://www.who.int/csr/about/what_we_do/films/en/index.html

Diarrhoeal diseases

Key documents and position papers under Global task force on cholera control

<http://www.who.int/cholera/publications/en/>

Prevention and control of cholera outbreaks: WHO policy and recommendations

<http://www.who.int/cholera/technical/prevention/control/en/index.html>

WHO position paper on Oral Rehydration Salts to reduce mortality

<http://www.who.int/cholera/technical/en/index.html>

WHO position paper on cholera vaccine use in Iraq, October 2007

<http://www.who.int/cholera/CholeraVaccineuseinIraqpositionpaper051007.pdf>

Acute diarrhoeal diseases in complex emergencies: critical steps.

http://whqlibdoc.who.int/hq/2010/WHO_CDS_CPE_ZFK_2004.6_Rev.1_eng.pdf

http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFK_2004.6_fre.pdf

Cholera outbreak: assessing the outbreak response and improving preparedness

http://www.who.int/cholera/publications/cholera_outbreak/

http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFK_2004.4_fre.pdf

First steps for managing an outbreak of acute diarrhoea.

http://whqlibdoc.who.int/hq/2010/WHO_CDS_CSR_NCS_2003.7_Rev.2_eng.pdf

Guidelines for the control of shigellosis, including epidemics due to Shigella dysenteriae type 1

<http://www.who.int/cholera/publications/shigellosis/>

Oral cholera vaccine use in complex emergencies: What next? Report of a WHO meeting. Cairo, Egypt, 14–16 December 2005.

http://www.who.int/cholera/publications/cholera_vaccines_emergencies_2005.pdf

Background document: the diagnosis, treatment, and prevention of typhoid fever (WHO, 2003)

http://whqlibdoc.who.int/hq/2003/WHO_V&B_03.07.pdf

Drug donations

Guidelines for Drug Donations (WHO, revised 1999)

http://www.who.int/selection_medicines/emergencies/guidelines_medicine_donations/en/

http://whqlibdoc.who.int/hq/1999/WHO_EDM_PAR_99.4.pdf

<http://apps.who.int/medicinedocs/pdf/whozip53f/whozip53f.pdf>

Environmental health in emergencies

http://www.who.int/water_sanitation_health/hygiene/emergencies/en/

<http://www.emro.who.int/ceha/>

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>

http://www.who.int/foodsafety/publications/consumer/en/5keys_fr.pdf

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

<http://www.who.int/foodsafety/publications/micro/pif2007/en/index.html>

http://www.who.int/foodsafety/publications/micro/pif_guidelines_fr.pdf

Exposure to chemical warfare agents and other toxic chemicals

Public health response to biological and chemical weapons: WHO guidance (2004)

<http://www.who.int/csr/delibepidemics/biochemguide/en/>

Phosphorus trichloride International Chemical Safety Card 0696

<http://www.inchem.org/documents/icsc/icsc/eics0696.htm>

Case definitions for chemical poisoning

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5401a1.htm>

Gender & Gender-based violence (see also Sexual and Reproductive Health in Emergencies below)

IASC Guidelines for Gender-based Violence Interventions in Humanitarian Settings (2005)

Arabic, English, French, Bahasa, Spanish

http://www.humanitarianinfo.org/iasc/pageloader.aspx?page=content-subsi-tf_gender-gbv

<http://www.humanitarianinfo.org/iasc/downloadDoc.aspx?docID=4435>

IASC Gender Handbook in Humanitarian Action Women, Girls, Boys and Men Different Needs – Equal Opportunities (2006)

<http://www.humanitarianinfo.org/iascweb2/pageloader.aspx?page=content-products-products&productcatid=3>

WHO/UNHCR Clinical management of rape survivors: Developing protocols for use with refugees and internally displaced persons. 2004 - Revised edition

<http://whqlibdoc.who.int/publications/2004/924159263X.pdf>

http://whqlibdoc.who.int/publications/2005/9242592633_fre.pdf

Women's health in emergencies

<http://www.who.int/hac/techguidance/pht/womenshealth/en/index.html>

WHO, UNHCR & UNFPA Clinical Management of Rape e-learning Programme (English and French)

http://libdoc.who.int/hac/CMoR_CDDownloadMultilingualVersion.zip

Online version: <http://iawg.net/cmor/>

Hepatitis

Hepatitis A

<http://www.who.int/csr/disease/hepatitis/whocdscsredc2007/en/>

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>

AIDS and Sexually Transmitted Diseases (WHO-EMRO)

<http://www.emro.who.int/asd/>

Infection prevention and control in health care

WHO Aide – memoire: Standard Infection control precautions in health care, 2006

<http://www.who.int/csr/resources/publications/standardprecautions/en/index.html>

Infection prevention and control in health care for confirmed or suspected cases of pandemic (H1N1) 2009 and influenza-like illnesses, 2009

<http://www.who.int/csr/resources/publications/swineflu/swineinflcont/en/index.html>

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

http://whqlibdoc.who.int/publications/2009/9789241598323_eng.pdf

Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care WHO Interim Guidelines, 2007

http://www.who.int/csr/resources/publications/swineflu/WHO_CD_EPR_2007_6/en/index.html

Influenza

WHO Global Influenza Programme

<http://www.who.int/csr/disease/influenza/en/>

WHO-EMRO

http://www.emro.who.int/csr/h1n1/clinical_management.htm

Injection safety (see also Patient safety below)

http://www.who.int/injection_safety/en/

http://www.who.int/injection_safety/Injection_safety_final-web.pdf

Guiding principles to ensure injection device security

http://www.who.int/injection_safety/Guiding_Principals_FR.pdf

http://www.who.int/injection_safety/WHOGuidPrinciplesInjEquipFinal.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)

http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_CSR_EDC_2000_4/en/

Lymphatic filariasis

<http://www.who.int/mediacentre/factsheets/fs102/en/>

Malaria

Guidelines for the treatment of malaria, Second edition (WHO, 2010)

<http://www.who.int/malaria/publications/atoz/9789241547925/en/index.html>

Malnutrition

Communicable diseases and severe food shortage situations (WHO, 2010)

http://www.who.int/diseasecontrol_emergencies/publications/food_shortage/en/index.html

The management of nutrition in major emergencies.

<http://www.who.int/nutrition/publications/emergencies/en/index.html>

<http://whqlibdoc.who.int/publications/2000/9241545208.pdf>

Infant and Young Child Feeding in Emergencies. Operational guidance for emergency relief staff and programme managers (IFE, 2007)

<http://www.enonline.net/resources/6>

IFE Orientation Package (2010)

<http://www.enonline.net/ife/orientation>

IASC Cluster module 17 on IFE

<http://www.humanitarianreform.org/Default.aspx?tabid=488>

Guide for the media on IFE (Arabic)

[http://www.enonline.net/pool/files/ife/media-guide-on-ife-arabic\(1\).pdf](http://www.enonline.net/pool/files/ife/media-guide-on-ife-arabic(1).pdf)

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://www.who.int/child_adolescent_health/documents/fch_cah_00_1/en/index.html

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, EMRO

<http://www.emro.who.int/nutrition/index.htm>

Management of dead bodies

Management of dead bodies after disasters: a field manual for first responders (PAHO, 2006)

<http://www.paho.org/english/dd/ped/DeadBodiesFieldManual.pdf>

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

<http://www.paho.org/english/DD/PED/DeadBodiesBook.pdf>

Measles

WHO/UNICEF Joint Statement on reducing measles mortality in emergencies

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.)

http://www.who.int/immunization/documents/WHO_IVB_09.03/en/index.html

<http://www.who.int/immunization/documents/date/en/index.html>

WHO measles information

<http://www.who.int/immunization/topics/measles/en/index.html>

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), EMRO

<http://www.emro.who.int/vpi/measles/>

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)

<http://www.healthcarewaste.org/en/documents.html?id=15&suivant=16>

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

<http://www.healthcarewaste.org/en/documents.html?id=184&suivant=8>

Meningitis

Control of epidemic meningococcal disease. WHO practical guideline, 2nd edition (WHO, 1998)

<http://www.who.int/csr/resources/publications/meningitis/WHO EMC BAC 98 3 EN/en/>

<http://www.who.int/csr/resources/publications/meningitis/whoemcbac983f.pdf>

Mental health in emergencies

IASC Reference Group for Mental Health and Psychosocial Support in Emergency Settings. (2010)

http://www.who.int/mental_health/emergencies/

http://www.who.int/mental_health/emergencies/what_humanitarian_health_actors_should_know.pdf

Patient safety (see also Injection safety above)

<http://www.who.int/patientsafety/en/>

Polio

WHO-recommended surveillance standard of poliomyelitis

http://www.who.int/immunization_monitoring/diseases/poliomyelitis_surveillance/en/index.html

Rabies

WHO-Guide for post-exposure prophylaxis

<http://www.who.int/rabies/human/postexp/en/>

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.who.int/reproductivehealth/publications/emergencies/field_manual/en/index.html

Minimal Initial Service package (MISP) for Reproductive Health in Crisis Situations

http://www.iawg.net/resources/MISP%20cheat%20sheet%2012%2017%2009_FINAL.pdf

<http://misp.rhrc.org/>

Inter-Agency Reproductive Health Kits for crisis situations

http://www.who.int/reproductivehealth/publications/emergencies/rh_kits/en/index.html

Reproductive Health in Emergencies (general)

<http://www.iawg.net/>

<http://www.who.int/reproductivehealth/topics/emergencies/en/index.html>

Risk communication

Information management and communication in emergencies and disasters.

http://new.paho.org/disasters/index.php?option=com_content&task=view&id=997&Itemid=1

WHO Outbreak Communication Planning Guide, 2008.

<http://www.who.int/ihr/elibrary/WHOOutbreakCommsPlanngGuide.pdf>

WHO Outbreak communication guidelines

<http://www.who.int/infectious-disease-news/IDdocs/whocds200528/whocds200528en.pdf>

Specific messages:

Hand hygiene:

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

Food safety:

<http://www.who.int/foodsafety/publications/consumer/5keys/en/index.html>

http://www.who.int/foodsafety/publications/consumer/en/5keys_fr.pdf

http://www.who.int/foodsafety/publications/consumer/en/Five_Keys_Arabic.pdf

Preventing water-related diseases:

<http://www.who.int/features/qa/31/en/>

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

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

<http://www.who.int/surgery/publications/imeesc/en/index.html>

Tetanus

Immunological basis of immunisation – tetanus

<http://www.who.int/immunization/documents/ISBN9789241595551/en/index.html>

WHO Position Paper on Tetanus Immunisation

http://www.who.int/immunization/wer8120tetanus_May06_position_paper.pdf

Travel advice

Guide on Safe Food for Travellers

<http://www.who.int/foodsafety/publications/consumer/travellers/en/index.html>

http://www.who.int/foodsafety/publications/consumer/travellers_fr.pdf

International Travel and Health (2010)

<http://www.who.int/ith/en/>

Tuberculosis

Tuberculosis care and control in refugee and displaced populations. An interagency field manual (2007).

http://whqlibdoc.who.int/publications/2007/9789241595421_eng.pdf

Vector control

Integrated vector management

http://www.who.int/malaria/vector_control/ivm/en/index.html

Malaria vector control

<http://www.who.int/malaria/vectorcontrol.html>

Pesticides and their application for the control of vectors and pests of public health importance (2006)

http://whqlibdoc.who.int/hq/2006/WHO_CDS_NTD_WHOPES_GCDPP_2006.1_eng.pdf

Water and Sanitation

Guidelines for drinking-water quality, third edition, incorporating first addendum

http://www.who.int/water_sanitation_health/dwq/gdwq3rev/en/index.html

Environmental health in emergencies and disasters: a practical guide

http://www.who.int/water_sanitation_health/emergencies/emergencies2002/en/index.html

WHO Technical notes for emergencies

http://www.who.int/water_sanitation_health/hygiene/envsan/technotes/en/index.html

Frequently asked questions in case of emergencies

http://www.who.int/water_sanitation_health/emergencies/qa/en/index.html

Four steps for the sound management of health-care waste in emergencies

<http://www.healthcarewaste.org/en/documents.html?id=184&suivant=25>

Wounds and Injuries, Emergency Surgical Care (See also Tetanus above)

Prevention and management of wound infection

<http://www.who.int/hac/techguidance/tools/Prevention%20and%20management%20of%20wound%20infection.pdf>

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

<http://www.who.int/surgery/publications/imeesc/en/index.html>

Best Practice Guidelines on Emergency Surgical Care in Disaster Situations

<http://www.who.int/surgery/publications/BestPracticeGuidelinesonESCinDisasters.pdf>

WHO generic essential emergency equipment list

<http://www.who.int/surgery/publications/EEEGenericListFormatted%2006.pdf>

Zoonotic diseases

<http://www.who.int/zoonoses/resources/en/>

<http://www.who.int/csr/disease/plague/en/>