ESSENTIAL MEDICINES LIST FOR EMERGENCIES AND DISASTERS IN THE CARIBBEAN

Pan American Health Organization
Regional Office of the World Health Organization

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A Joint Publication of the Areas of
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INTRODUCTION

Background

The countries of Latin America and the Caribbean are highly exposed to natural hazards. Every year, countries are faced by threats of hurricanes, floods, landslides, earthquakes and volcanoes. Such hazards affect agriculture, infrastructure, businesses, economy and health. The misfortune generated by these disasters is compounded by an increased risk of its population to certain diseases or health situations of which some of them can be prevented. Very often, the damage to public buildings and services reduces the capacity of national authorities to lead and coordinate the response and also people have diminished its access to health centers.

Several diseases were observed in the aftermath of such disaster situations. For example, floods can potentially increase the transmission of water-borne diseases such as cholera, typhoid fever and leptospirosis. Vector-borne diseases such as malaria, dengue, dengue hemorrhagic fever, and yellow fever can also be observed. Other illnesses of main concern after disaster events are skin problems and trauma, and of less occurrence are rabies, *Clostridium dificile*, tetanus, snake bite, meningitis, acute respiratory infections (ARI) (pneumonia), and acute malnutrition. Mental health problems may also increase following a disaster.

Humanitarian emergencies caused by conflict or natural disasters are frequently characterized by the displacement of large numbers of people. Those affected are often resettled in temporary locations with high population densities, inadequate food and shelter, unsafe water and poor sanitation. These conditions increase the risk of transmission of communicable diseases and other conditions and lead to increased mortality, particularly from outbreak-prone diseases.

In many cases, the immediate concerns after an earthquake or hurricanes with collapsed and damaged buildings are injuries which are very often severe which often necessitate medicines for minor and major surgery in the Emergencies and Disasters Essential Medicines List (EDEML). However, as disaster impact worsens; risks of communicable diseases especially among women and children are of a health threats to the community.

Effects of population displacement, lack of safe water and nutrition, and overcrowded shelters increase children's susceptibility to acute respiratory infections and deadly childhood diseases, such as measles and diarrhea. Experiences in other emergencies involving displaced populations have shown that measles is one of the major causes of death among young children. The disease spreads rapidly in overcrowded conditions, and serious respiratory tract infections are

frequent, particularly in malnourished children. Malnutrition is common in developing countries, causing morbidity rates to increase.

Aiming to respond to an increasing number of large scale disasters and emergencies, the prevention and management of serious threats to the survival and health of the affected populations, requires from the countries to be prepared with a timely and appropriate emergency and disaster management plan. Soon after an emergency, it is important to focus in providing continuous health services in health facilities, disease surveillance, and providing the needed essential medicines. A standard medicines list in emergencies and disasters permits an effective response with medicines and medical devices using standard, pre-packed kits that could be kept in readiness to meet priority health needs in emergencies.

The provision of the medicines from the EDEML will help in reducing any excess in morbidity and mortality due to communicable and non communicable diseases in populations affected by disasters and emergencies.

Chronic conditions were recognized as an important health concern in emergencies and disasters: cardiovascular diseases (hypertension, ischemic heart disease, cerebrovascular disease and heart failure), cancer, diabetes, acute and chronic respiratory disease (asthma and chronic obstructive pulmonary disease) and mental health problems (psychiatric disorders and symptoms derived from severe distress). The priorities during the acute phase of the emergencies are to treat exacerbations and minimize treatment interruptions.

Much of the affected population is likely to suffer a wide range of symptoms of anxiety and other psychological problems caused by severe distress and constrained living conditions.

It is necessary to differentiate normal reactions to the disaster, which can be handled through psychosocial interventions, such as psychological first aid, from those that require a specialize treatment and represent an increase in prevalence of mental disorders. Furthermore, it is also necessary to be prepared with adequate and continued care to treat people with severe mental disorders which should not interrupt their treatments. An Essential Medicines List is prepared to address the medicines needs of the affected population post emergencies and disaster.

Technical Document Preparation and Experts Consultation

This technical document is a result of the inter-programmatic work of PAHO/WHO's Area of Health Systems Based on Primary Health Care/Medicines and Health Technologies and the Area on Emergency Preparedness and Disaster Relief. A preliminary consultation with the technical advisors of both Areas and experts from PAHO/WHO Collaborating Centre in Rational Use of Medicines from the University of La Plata was conducted in Barbados from August 31 to September 1, 2009 and a first draft with the main health problems and possible essential medicines was developed. Based on that, the Collaborating Centre prepared a second draft that was submitted to the consensus meeting, held in Barbados on 17-18 May 2010, with participation of experts in both areas from Caribbean Institutions, Ministries of Health, University of West Indies, University of Technology and Caribbean Regional Epidemiology Centre (CAREC), the PAHO/WHO Collaborating Centre on Pharmaceutical Policies of Fiocruz, facilitated by experts from PAHO/WHO Col-

laborating Centre in Rational Use of Medicines from the University of La Plata and supported by both PAHO/WHO technical areas.

Essential medicines are selected with due regard to disease prevalence, evidence on efficacy and safety, and comparative cost-effectiveness. The 16th Edition of the Model List of Essential Medicines (2010)[1] and the Interagency Emergency Health Kit (2006)[2] were used as references. It is proposed as a first approach to be used as contribution for the national disaster preparedness plans which need to be updated regularly.

Recommendations

During the expert consultation meeting, recommendations were made:

- The existence of an essential medicines list post disaster is very crucial and this has to be integrated as much as possible to countries' National Essential Medicines List.
- Existing outbreaks and health situations that require intervention may be exacerbated during emergency and disasters situations. In that regard, a functional epidemiological surveillance and updated information of the epidemiological profile are very useful for preparing the timely response.
- At the same time, it needs to consider the existence of regular programmes or services for specific health condition or problems, such as provision of folic acid for prevention of neural tube, Non-Communicable Diseases (NCD), Sexually Transmitted Infections (STI) and HIV/AIDS response and a structured Expanded Program on Immunization (EPI). It was thought that these programmes related to general public health were better managed outside of disaster situations. Therefore EPI and other preventative programmes were not considered in this document, but it was strongly recommended that these programmes should have optimal coverage prior to such event under the regular programme and the necessary provisions for guaranteeing to continuity of care in emergency situations.
- Vector-borne disease control also needs to be considered as post disaster response. More specific response to animal and insect bites, stings and envenomations were also considered particularly due to its prevalence to some countries in the region.
- Moreover, the proposed list aims to assist management of donated medicines, and highlights adequate medicines management as stated in the *Interagency Guidelines for Drug Donations* (http://whqlibdoc.who.int/hq/1999/who_edm_par_99.4.pdf) published by WHO in 1999. It emphasized requirements and epidemiological profile, language, national regulatory requirements, extended expiration dates and the adequate communication with the health authorities prior to the donation.

1. Prepared by the WHO Expert Committee, published in March 2009 and updated in March 2010. Available at: http://www.who.int/medicines/publications/essentialmedicines/Updated_sixteenth_adult_list_en.pdf.
2. Available at: http://www.who.int/hac/techguidance/tools/IEHK2006.pdf.

OBJECTIVES

The EDEML is intended for use by national policy makers, clinicians and pharmacists as reference for the preparation of national disaster plans and emergency management, and to form part of the national essential medicines list.

General Objective

To provide an essential medicines list to assist in responding to post disaster or emergency situations.

Specific Objectives

- To assist countries in providing urgent medical care in the acute phase of the disaster and emergencies, including emergency surgical interventions.
- To assist countries in continuing health care for people under treatment, including those with HIV/AIDS, tuberculosis, chronic conditions such as diabetes, asthma, and cardiovascular diseases and mental health disorders.

CRITERIA OF MEDICINES SELECTION

In order to select medicines to be included in the Emergencies and Disasters Essential Medicines List (EDEML) the following were considered:

1. The common health problems encountered in the region's post emergency and disasters.
2. The medicines with proven efficacy for clinical relevant outcomes and adequate profile of safety, which according to the methodology of the WHO Model List of Essential Medicines, has the supporting evidence to be indicated for solving the above selected health problems.[3]
3. Pharmacokinetic characteristics of selected medicines with adequate benefits were considered in order to meet its suitability to the majority of the targeted population.
4. All medicines' nomenclature and formulations in the EDEML are in accordance with the last version of the *WHO Essential Medicines List* (16th edition, 2010).[4]
5. Cost of treatment was also taken into account to select the most cost-effective medicines.

In order to define the main health problems to be covered during emergency and disaster situations, it is important to get updated pre-emergency epidemiological data of the targeted countries, including population demography, disease prevalence, morbidity and mortality patterns and the disasters profile, as well as the level of training of those who are going to use these medicines.

For each group of health conditions, the medicines are presented with the International Non-Proprietary Name (INN), followed by the pharmaceutical formulation, dosage and indication. A list in alphabetical order is also included.

3. WHO (2002a). *The selection and use of essential medicines* (includes the WHO Model List of Essential Medicines). Report of the WHO Expert Committee. Technical Report Series No. 914, World Health Organization, Geneva.
4. The *WHO Essential Medicines List* is reviewed and updated every 2 years. For the latest version, please consult: http://www.who.int/medicines/publications/essentialmedicines/en/.

MAIN HEALTH PROBLEMS IN DISASTERS AND EMERGENCIES

The initial work involved in developing this technical document included a review of common health conditions that would need treatment in emergencies and disasters in the Caribbean region, considering the impact of those events in the population and also the potential exacerbations of chronic conditions. Later, this list was updated to consider the possible health conditions in the region of Americas in emergency and disaster situations.

The list was developed with above criteria and is consistent with most recently published *Public health risk assessment and interventions* on the earthquake of Haiti.[5] This assessment was compiled by the unit on Disease Control in Humanitarian Emergencies in collaboration with Health Action in Crisis at WHO, offering an up-to-date guidance on the major public health threats faced by the earthquake-affected population

The common health problems stated were selected to provide the backbone of the Emergencies and Disasters EML. They were classified in three categories:

I - HIGH PRIORITY for responding to the acute phase of the emergency and disaster;

II - MEDIUM PRIORITY for post-disaster management and;

III - PUBLIC HEALTH INTERVENTIONS, as follows:

I. High Priority (Acute Phase)

1. Prevention and treatment of communicable diseases: malaria, leptospirosis, meningitis and encephalitis, fever, acute respiratory infections, diarrhea.
2. Gastrointestinal tract problem: nausea, vomiting and gastrointestinal (GI) muscle spasm.
3. Injuries: physical trauma, prevention and management of wound infection, prevention of tetanus and rabies and treatment of venom toxicity.
4. Major and minor surgery, including coagulation problems.

5. PAHO/WHO. *Public health risk assessment and interventions: Earthquake: Haiti.* Jan. 2010. WHO Communicable Diseases Working Group on Emergencies, Communicable Diseases Surveillance and Response, WHO Regional Office for the Americas, WHO Country Office, Haiti.

5. Mental health: Anxiety, depression, psychosis and epilepsy.
6. Reproductive health: Prevention and treatment of sexually transmitted infections – gonococcal infections: *gonorrhea* and *chlamydia* and non-gonococcal: *thrichomoniasis* and *bacterial vaginosis*.
7. Skin infections.
8. Non-communicable diseases: Severe acute asthma (bronchospasm).

II. Medium Priority (Post-Disaster Management)

1. Prevention and treatment of communicable diseases: tuberculosis (TB).
2. Reproductive health: Sexually transmitted infections (STI): syphilis, HIV post-exposure prophylaxis (PEP) and emergency contraception, prevention and health problems related to pregnancy, HIV prevention.
3. Treatment of non communicable diseases: diabetes, cardiovascular diseases, respiratory diseases: asthma and COPD and blood problems: anemia.

III. Public Health Interventions

1. Insecticides(for bed nets and other items).
2. Water purifier.
3. Disinfectants.

EMERGENCIES AND DISASTERS ESSENTIAL MEDICINES LIST (EDEML)

I- HIGH PRIORITY (acute phase)		
1. Prevention and treatment of communicable diseases		
Malaria		
Medicine (INN) (International Non-Proprietary Name)	**Pharmaceutical Formulations**	**Indications and dosages**
A. Prophylaxis		
For chloroquine- sensitive plasmodia: *P. Vivax* and *P. Falciparum*		
Chloroquine	Oral liquid 50 mg (as phosphate or sulfate)/5 ml. Tablet 150 mg (as phosphate or sulfate).	ADULT: 300 mg once a week Start 1 week before departure and continue for 4 weeks after return. If daily doses: start 1 day before departure. (traveler guide) CHILD: 5 mg /kg once a week It is safe for use in pregnant, and breast feeding woman and also in children.
For resistant parasites or clinical conditions with contraindication to chloroquine, select one of the medicines listed below, according to reported resistance pattern.		
Doxycycline	Tablet 100 mg (as hydrochloride)	CHILD over 8 years.1.5 mg /kg daily. ADULT: 100 mg daily for up to 8 weeks Start 1 day before departure and continue for 4 weeks after return.[1]
Mefloquine	Tablet 250 mg as hydrochloride	CHILD over 5 kg or 3 months: 5 mg/kg once a week ADULT 250 mg once a week. Start at least 1 week (preferably 2-3 weeks) before departure and continue for 4 weeks after return.[1]

B. Curative Treatment		
For chloroquine- susceptible plasmodia		
Chloroquine	Oral liquid 50 mg (as phosphate or sulfate)/5 ml. Tablet 150 mg (as phosphate or sulfate).	*Treatment of acute malaria for P. falciparum and P. vivax* *It is safe for use in pregnant and breast feeding women and in children.* By mouth, ADULT and CHILD 10 mg/kg followed by 5 mg/kg 6–8 hours later; then 5 mg/kg daily on next 2 days (or 10 mg/kg for 2 days, followed by 5 mg/kg daily on day 3); total dose, 25 mg/kg over 3 days.
Primaquine	Tablet 15 mg (as diphosphate).	*Treatment of P. vivax (after standard chloroquine therapy)* *For use only in combination with chlroquine for P. vivax* By mouth, ADULT 250 micrograms/kg daily (or 15 mg daily) for 14 days; CHILD 250 micrograms/kg daily for 14 days; in G6PD deficiency, ADULT 750 micrograms/kg once a week for 8 weeks; CHILD 500–750 micrograms/kg once a week for 8 weeks.
For chloroquine resistant *P. falciparum*		
Quinine	Tablet 300 mg (sulfate or bisulfate). Injection 300 mg quinine hydrochloride/ml in 2 ml ampoule. *Quinine is safe to be used in pregnant and breast feeding women and also in children*	*For use only in combination with doxycycline for chloroquine resistant P. falciparum and in the management of severe malaria.* By mouth, ADULT 600 mg (quinine sulfate) every 8 hours for 3, 7, or 10 days; CHILD 10 mg/kg (quinine sulfate) every 8 hours for 3, 7, or 10 days; duration of treatment depends on local susceptibility of P. falciparum and whether or not additional antimalarials also used. Patients with MDR P. falciparum, unable to take by mouth, give slow intravenous infusion (over 4 hours), ADULT 20 mg/kg (quinine dihydrochloride) followed by 10 mg/kg (quinine dihydrochloride) every 8 hours; CHILD 20 mg/kg (quinine dihydrochloride) followed by 10 mg/kg (quinine dihydrochloride) every 12 hours; initial dose should be halved in patients who have received quinine, quinidine or mefloquine during the previous 12–24 hours.

Doxycycline	Capsule 100 mg (as hydrochloride)	*For use only in combination with quinine or artesunate for multidrug-resistan P. falciparum, malaria* By mouth, ADULT and CHILD over 8 years, 100 mg twice daily for 7–10 days.
Artemether + lumefantrine	Tablet: 20 mg + 120 mg.	*Only for areas with multidrug resistance. This fixed-dose combination is not recommended for prophylaxis and should not be used by women in the first trimester of their pregnancy, since safety in pregnancy has not yet been established, or in children < 5 kg.* Treatment of uncomplicated falciparum malaria, by mouth, ADULT and CHILD over 12 years and body weight over 35 kg, initially 4 tablets followed by 5 further doses of 4 tablets each at 8, 24, 36, 48 and 60 hours (total 24 tablets over 60 hours); CHILD body weight 5–14 kg, initially 1 tablet followed by 5 further doses of 1 tablet each at 8, 24, 36, 48 and 60 hours (total 6 tablets over 60 hours); body weight 15–24 kg, initially 2 tablets followed by 5 further doses of 2 tablets each at 8, 24, 36, 48 and 60 hours (total 12 tablets over 60 hours); body weight 25–34 kg, initially 3 tablets followed by 5 further doses of 3 tablets each at 8, 24, 36, 48 and 60 hours (total 18 tablets over 60 hours)
Mefloquine	Tablet 250 mg as hydrochloride (> 5 kg or 3 months).	If mefloquine was not used as prophylaxis By mouth, ADULT and CHILD 25 mg/kg usually given over 2–3 days
C. Treatment of Pregnant Women		
Uncomplicated *P. falciparum* malaria		
Quinine	Tablet 300 mg.	*Used in combination quinine and clindamycin* Treatment of multiple-drug resistant P. falciparum malaria, by mouth, ADULT 600 mg (quinine sulfate) every 8 hours for 3, 7, or 10 days; CHILD 10 mg/kg (quinine sulfate) every 8 hours for 3, 7, or 10 days; duration of treatment depends on local susceptibility of P. falciparum and whether or not additional antimalarials also used.
Clindamycin	Capsule 150 mg Oral liquid:75 mg/5 ml	By mouth 450 mg every 8 hours for 7 days.[2]

Artesunate	Injection: ampoules, containing 60 mg anhydrous artesunic acid with a separate ampoule of 5% sodium bicarbonate solution. Tablet: 50 mg.	Use only in areas with drugs resistance. By mouth, ADULT and CHILD over 5 months, 4 mg/kg daily for 3 days. By intravenous or intramuscular injection, ADULT initially 2.4 mg/kg then repeated at 12 hours intervals for 2 further doses, then once daily
Leptospirosis		
Prophylaxis		
Doxycycline	Tab 100 mg.	Tab. 100 mg. twice a day for 7 days[3]
Treatment		
For severe cases		
Penicillin G (benzylpenicillin	Powder for injection: 600 mg (= 1 million IU), 3 g (= 5 million IU) (sodium or potassium salt) in vial.	By intramuscular injection or by slow intravenous injection or by intravenous infusion, ADULT 2.4–4.8 g daily in 4 divided doses NEONATE under 1 week 50 mg/kg daily in 2 divided doses, 1 to 4 weeks 75 mg/kg daily in 3 divided doses; CHILD 1 month–12 years, 100 mg/kg daily in 4 divided doses.
For less severe cases or penicillin allergy		
Doxycycline	Tab 100 mg. Intravenous infusion of a solution containing 0,1 to 1 mg/ml as hydrochloride.[4]	Tab. 100 mg twice daily for 7 days. In patients with severe cases of leptospirosis and penicillin allergy Doxycycline may be given, as the hydrochloride3by slow intravenous infusion of a solution containing 0.1 to 1 mg per mL, in doses equivalent to those by mouth. Infusions should be given over 1 to 4 hours.[4]
Meningitis and Encephalitis		
Meningococcal meningitis (prophylaxis)		
Ceftriaxone	Powder for injection: 250 mg (as sodium salt) in vial. *Do not administer with calcium and avoid in infants with hyperbilirubinemia > 41 weeks corrected gestational age.*	CHILD aged under 15 yrs 125 mg single IM dose; ADULTS 250 mg single IM dose[5]
Ciprofloxacin	Tablet: 250 mg (as hydrochloride).	ADULTS, 500 mg single dose. Not usually recommended for persons under 18 years or for pregnant and lactating women.[5]

Meningococcal meningitis		
Penicillin G (benzylpenicillin)	Powder for injection: 600 mg (= 1 million IU); 3 g (= 5 million IU) (sodium or potassium salt) in vial.	Meningococcal disease, by *slow intravenous injection or by intravenous infusion*, ADULT, up to 14.4 g daily in divided doses; PREMATURE INFANT and NEONATE under 1 week, 100 mg/kg daily in 2 divided doses; NEONATE 1–4 weeks, 150 mg/kg daily in 3 divided doses; CHILD 1 month–12 years, 180–300 mg/kg daily in 4–6 divided doses. Suspected meningococcal disease (before transfer to hospital), *by intramuscular injection or by slow intravenous injection*, ADULT and CHILD over 10 years, 1.2 g; INFANT under 1 year, 300 mg; CHILD 1–9 years, 600 mg.
Chloramphenicol	Oily suspension for injection: 0.5 g (as sodium succinate)/ml in 2-ml ampoule.	*Only for the presumptive treatment of epidemic meningitis in children older than 2 years.* *The oily suspension should be reserved for use in situations of catastrophic epidemics of meningococcal meningitis, during which the medical services are overwhelmed by the epidemic and in which the overwhelming scale of the epidemic precludes any other form of antimicrobial therapy.* By intramuscular injection (of oily suspension), ADULT, 3 g as a single dose, repeated after 48 hours if necessary; INFANT 1–8 weeks, 250 mg as a single dose; INFANT 2–11 months, 500 mg as a single dose; CHILD 1–2 years, 1 g as a single dose; CHILD 3–5 years, 1.5 g as a single dose; CHILD 6–9 years, 2 g as a single dose; CHILD 10–14 years, 2.5 g as a single dose; CHILD over 15 years, as for adult, repeated after 48 hours if necessary.

Acute respiratory infections		
Lower respiratory tract infections		
Pneumonia		
Amoxicillin	Powder for oral liquid; 250 mg (anhydrous)/5 ml . Solid oral dosage form: 500 mg (anhydrous).	ADULT, 0.5–1 g every 8 hours CHILD over 10 years, 250 mg every 8 hours, doubled in severe infections; CHILD up to 10 years, 125 mg every 8 hours, doubled in severe infections.
Amoxicillin + clavulanic acid	Oral liquid: 250 mg + 62.5 mg /5 ml. Tablet: 500 mg + 125 mg. Powder for injection: 1g + 200mg.	Infections due to susceptible beta-lactamase-producing organisms and for use in chronical obstructive pulmonary disease (COPD) exacerbations. *By mouth,* ADULT and CHILD over 12 years, 250 mg every 8 hours, doubled in severe infections; CHILD under 1 year, 20 mg/kg daily in 3 divided doses; CHILD 1–6 years, 125 mg every 8 hours; CHILD 6–12 years, 250 mg every 8 hours. Infections due to susceptible beta-lactamase-producing organisms, *by intravenous injection* over 3–4 minutes, ADULT and CHILD over 12 years, 1 g every 8 hours, increased to 1 g every 6 hours in severe infections; NEONATE and PREMATURE INFANT, 25 mg/kg every 12 hours; INFANT up to 3 months, 25 mg/kg every 8 hours; CHILD 3 months to 12 years, 25 mg/kg every 8 hours, increased to 25 mg/kg every 6 hours in more severe infections.
Clarithromycin	Tablet: 250 mg Pediatric suspension: clarithromycin for reconstitution with water 125 mg/5 ml Powder for injection: 500 mg vial[2]	By mouth: ADULT: 250 mg every 12 hours for 7 days, increased in severe infections to severe infections to 500 mg every 12 hours for up to 14 days. CHILD: body-weight under 8 kg, 7.5 mg/kg twice daily; 8-11 kg (1-2 years), 62.5 mg twice daily; 20-29 kg (7-9 years), 187.5 mg twice daily; 30-40 kg (10-12 years), 250 mg twice daily By intravenous infusion into larger proximal vein, 500 mg twice daily (CHILD under 12 see BNF children)[2]

Ceftriaxone	Powder for injection: 1 g (as sodium salt) in vial. *Do not administer with calcium and avoid in infants with hyperbilirubinemia > 41 weeks corrected gestational age.*	Infections due to susceptible organisms, *by deep intramuscular injection, by intravenous injection* (over at least 2–4 minutes), or *by intravenous infusion*, ADULT, 1 g daily; up to 2–4 g daily in severe infections; INFANT and CHILD under 50 kg, 20–50 mg/kg daily should be given, up to 80 mg/kg daily in severe infections (doses of 50 mg/kg and over by intravenous infusion only). *By intravenous infusion* (over 60 minutes), NEONATE, 20–50 mg/kg daily (maximum, 50 mg/kg daily).
2. Gastrointestinal Tract Problems		
Diarrhea		
Dehydratation		
Oral rehydration salts	Osmolarity: 245 mOsm/L. Powder for dilution in 200 ml; 500 ml;	It is recommended that parents are shown how to give approximately 75 ml/kg of oral rehydration solution (in small amounts and at regular intervals) over a 4-hour period.
Need of re-epithelization in dehydration		
Zinc sulfate	Oral liquid: in 10 mg per unit dosage forms. Tablet dispersible 20 mg.	Adjunct to oral rehydration therapy in acute diarrhea. *By mouth,* INFANT under 6 months, 10 mg (elemental zinc) daily for 10–14 days; CHILD 6 months–5 years, 20 mg (elemental zinc) daily for 10–14 days.
If required, in presence of bloody diarrhea and with positive stool analysis antibiotics treatment is indicated		
Ciprofloxacin	Tablet: 250 mg (as hydrochloride).	For shigellosis, by mouth, ADULT, 500 mg twice daily for 3 days.
Sulfamethoxazole + Trimethoprim	Injection: 80 mg + 16 mg/ml in 5-ml ampoule. Oral liquid: 200 mg + 40 mg/5 ml. Tablet: 400 mg + 80 mg.	For salmonella *by mouth*, ADULT, 800 mg + 160 mg every 12 hours, increased to 1.2 g + 240 mg every 12 hours in more severe infections; CHILD 6 weeks–5 months, 100 mg + 20 mg every 12 hours; CHILD 6 months–5 years, 200 mg + 40 mg every 12 hours; CHILD 6–12 years, 400 mg + 80 mg every 12 hours; *by intravenous infusion*, ADULT, 800 mg + 160 mg every 12 hours, increased to 1.2 g + 240 mg, every 12 hours in more severe infections; CHILD, 30 mg/kg daily + 6 mg/kg daily in 2 divided doses.

Nausea and vomiting		
Metoclopramide	Injection: 5 mg (hydrochloride)/ml in 2-ml ampoule. Tablet: 10 mg (hydrochloride).	By mouth, *by intramuscular injection, or by slow intravenous injection (over 1–2 minutes),* ADULT, 10 mg 3 times daily; YOUNG ADULT 15–19 years (under 60 kg), 5 mg 3 times daily; CHILD up to 1 year (up to 10 kg), 1 mg twice daily; CHILD 1–3 years (10–14 kg), 1 mg 2–3 times daily; CHILD 3–5 years (15–19 kg), 2 mg 2–3 times daily; CHILD 5–9 years (20–29 kg), 2.5 mg 3 times daily; CHILD 9–14 years (30 kg and over), 5 mg 3 times daily (usual maximum 500 micrograms/kg daily, particularly for children and young adults).
Gastrointestinal smooth muscle spasm		
Hyoscine butylbromide	Tablet 10 mg Injection 20 mg/ml, amp 1ml2	By mouth, smooth muscle spasm, 20 mg 4 times daily; CHILD 6-12 years old, 10 mg 3 times daily, 12-18 years old 20 mg 3 times daily. (tablets licensed for use in children 6-18 years old) By intramuscular or slow intravenous injection, 20 mg repeated after 30 minutes if necessary, maximum 100 mg daily.[2, 6]
Cholera		
The following rehydration guidelines should be continued for infants that are breast-fed:		
Dehydration status		**Guideline**
Mild[9, 10]	Oral rehydration salts at home	Children under 2: 50 – 100 ml of oral rehydration solution (ORS), after each evacuation, the provision of a volume similar to the assessed fluid loss (gastrointestinal and urinary). Children aged 1 to 14 years: 100- 200 ml of oral rehydration solution (ORS), after each evacuation, the provision a volume similar to the assessed fluid loss (gastrointestinal and urinary). Children over 14 and adults: drink the amount of ORS needed, ingesting a volume similar to the assessed fluid loss (gastrointestinal and urinary); up to two liters daily.

Moderate[9, 19]	Oral rehydration salts and close clinical monitoring. Consider the patient should be sitting up during the treatment. If the taste of the solution causes nausea: oral rehydration via nasogastric tube.	**Administer in the first 4 hours:** Less than 4 months (less than 5 kg): 200-400 ml From 4 to 11 months (5 to 7.9kg): 400-600ml From 13 to 23 months (8 to 10.9 kg): 600 – 800 ml From 2 to 4 years (11 to 15.9 kg): 800 -1200ml From 5 to 14 years (16 to 29.9kg): 1200-2200 ml Over 15 years and adults (30 kg or more): 2200 – 4000 ml
Severe[11]	Rehydrate in two phases:	1. Intravenous rehydration (2-4 h): Intravenous Ringer Lactate is recommended, at the following perfusion rate: 1st hour: 50ml/kg 2nd hour: 25ml/kg 3rd hour: 25ml/kg Clinical assessment to determine whether to continue intravenous rehydration. 2. Oral rehydration: It is recommended starting as soon as the patient is able to drink. The guideline for moderate dehydration is followed, always adapting to the volume of fluid loss.
Antibiotic Treatment		
	Option 1	**Option 2**
Adults	Doxycycline, 300 mg po Single dose	Azithromycin, 1g po single dose or Ciprofloxacin, 1g po single dose.
Pregnant women	Azithromycin, 1g po single dose	Erythromycin, 500mg/6hours for 3 days
Children over 1 year, who can swallow tablets	Doxycycline, suspension for tablets, 2-4 mg/kg po in single dose	Ciprofloxacin, suspension or tablets, 20mg/kg, in a single dose or azithromycin, 20 mg/kg, in a single dose, without exceeding 1g or erythromycin 12.5mg/kg/6 hours for 3 days
Children under 1 year, or infants who cannot swallow tablets	Doxycycline, suspension, 2-4mg/kg po in a single dose	Ciproflaxcin,suspension,20 mg/kg, in a single dose or azithromycin, 20 mg/kg, in a single dose or erythromycin 12.5 mg/kg/6 hours for 3 days.

3. Injuries		
Physical Trauma		
Pain		
Paracetamol	Oral liquid: 125 mg/5 ml. Suppository: 100 mg. Tablet: 500 mg.	Mild to moderate pain, pyrexia, *by mouth*, ADULT, 0.5–1 g every 4–6 hours, maximum 4 g daily; CHILD 3 months–1 year, 60–125 mg; CHILD 1–5 years, 120–250 mg; CHILD 6–12 years, 250–500 mg (in children doses may be repeated every 4–6 hours if necessary; maximum, 4 doses in 24 hours). Mild to moderate pain, pyrexia, *by rectum*, ADULT, 0.5–1g; CHILD 1–5 years, 125–250 mg; CHILD 6–12 years, 250–500 mg (doses may be inserted every 4–6 hours if necessary; maximum, 4 doses in 24 hours). Infants under 3 months should not be given paracetamol unless advised by a doctor; a dose of 10 mg/kg(5 mg/kg if jaundiced) is suitable
Ibuprofen	Tablet: 400 mg. Tablet : 200 mg. Oral liquid: 100 mg/5 ml.[6]	Mild to moderate pain, pyrexia, inflammatory musculoskeletal disorders, *by mouth* with or after food, ADULT, 1.2–1.8 g daily in 3–4 divided doses, increased if necessary to maximum 2.4 g daily (3.2 g daily in inflammatory disease); maintenance dose of 0.6–1.2 g daily may be sufficient. CHILD (not recommended for children under 7 kg), *by mouth* with or after food, 20–40 mg/kg daily in divided doses; or CHILD 1–2 years, 50 mg 3–4 times daily; CHILD 3–7 years, 100 mg 3–4 times daily; CHILD 8–12 years, 200 mg 3–4 times daily. Not to be used in children under 3 months.
Diclofenac Potassium	Tablet: 50 mg	ADULT: 75-150 mg daily in 2-3 divided doses. CHILD 14-18 years old: 75-100 mg daily in 2-3 divided doses. Diclofenac potassium tablets licensed for use in children over 14 years old.[6]

Morphine	Injection: 10 mg (morphine hydrochloride or morphine sulfate) in 1-ml ampoule. Oral liquid: 10 mg (morphine hydrochloride or morphine sulfate)/5 ml. Tablet (prolonged release): 10 mg; 60 mg (morphine sulfate).	Acute pain, *by subcutaneous injection* (not suitable for oedematous patients) or by intramuscular injection, ADULT, 10 mg every 4 hours if necessary (15 mg for heavier well-muscled patients); INFANT up to 1 month, 150 micrograms/kg, 1–12 months, 200 micrograms/kg; CHILD 1–5 years, 2.5–5 mg, 6–12 years, 5–10 mg Chronic pain, *by mouth* (immediate-release tablets) or by subcutaneous injection (not suitable for oedematous patients) or by intramuscular injection, ADULT, 5–20 mg regularly every 4 hours; dose may be increased according to need; oral dose should be approximately double corresponding intramuscular dose.
Codeine		Mild to moderate pain, by mouth, ADULT and CHILD 12-18 years, 30–60 mg every 4 hours when necessary; maximum, 240 mg daily; CHILD 1–12 years, 0.5–1 mg/kg every 4–6 hours when needed; maximum, 240 mg daily. In children use only Tablet 15 mg (phosphate) formulation[7]
Prevention and management of wound infection		
Prevention of infections		
Antiseptics		
Chlorhexidine	Solution 5%	For topical use
Hydrogen Peroxide	Solution 30% (100 vol.) to be diluted to 3% and 6%	For use only for washing wounds
Prevention and management of wound infection (systemic)		
Antibiotic prophylaxis		
Penicillin G (Benzylpenicillin)	Powder for injection: 600 mg (=1 million IU); 3 g (=5 million IU) (sodium or potassium salt) in vial.	Adult: IV 8-12 million IU once. Child: IV 200,000 IU/kg once.

Clarithromycin	Tablet: 250 mg [2] Pediatric suspension: clarithromycin for reconstitution with water 125 mg/5 ml [2] Powder for injection: 500 mg vial [2]	By mouth: ADULT: 250 mg every 12 hours for 7 days, increased in severe infections to severe infections to 500 mg every 12 hours for up to 14 days.[2] CHILD: body-weight under 8 kg, 7.5 mg/kg twice daily; 8-11 kg (1-2 years), 62.5 mg twice daily; 20-29 kg (7-9 years), 187.5 mg twice daily; 30-40 kg (10-12 years), 250 mg twice daily.[2] By intravenous infusion into larger proximal vein, 500 mg twice daily.[2]
Metronidazole	Injection: 500 mg in 100-ml vial.	ADULT: IV 1,500 mg once (infused over 30 min). CHILD: IV 20 mg/kg once.
Antibiotic treatment		
Penicillin G (Benzylpenicillin)	*See pharmaceutical formulation above.*	ADULT: IV 1 – 5 MIU every 6 hours. CHILD: IV 100mg/kg daily divided doses (with higher doses in severe infections).
Clarithromycin	Tablet: 250 mg.[2] Pediatric suspension: clarithromycin for reconstitution with water 125 mg/5 ml.[2] Powder for injection: 500 mg vial.[2]	By mouth: ADULT: 250 mg every 12 hours for 7 days, increased in severe infections to severe infections to 500 mg every 12 hours for up to 14 days.[2] CHILD: body-weight under 8 kg, 7.5 mg/kg twice daily; 8-11 kg (1-2 years), 62.5 mg twice daily; 20-29 kg (7-9 years), 187.5 mg twice daily; 30-40 kg (10-12 years), 250 mg twice daily.[2] By intravenous infusion into larger proximal vein, 500 mg twice daily.[2]
Metronidazole	*See pharmaceutical formulation above.*	ADULT: IV 500 mg every 8 hours (infused over 20 minutes). CHILD: IV 7.5 mg/kg every 8 hours.
Tetanus Prevention		
Prevention		
Tetanus vaccine and immune globulin		
Diphtheria and tetanus vaccine (DT)	Injection 0.5 ml	ADULT and CHILDREN over 10 years: 1 dose (0.5 ml) by intramuscular or deep subcutaneous injection. Follow up: 6 weeks, 6 months (in children less than 10 years follow up at least 4 weeks and 8 weeks.
Antitetanus immunoglobulin (human)	Injection 500 IU in vial.	ADULT and CHILD 500 units/ vial 250 units by intramuscular injection, increased to 500 units if any of the following conditions apply: wound older than 12 hours; presence, or risk of, heavy contamination; or if patient weights more than 90 kg.

Rabies and venom prevention		
Immunization		
Antivenom immunoglobulin	Injection. *Exact type to be defined locally*	Depends on the specific antivenom used; consult manufacturer's literature.
Rabies immunoglobulin	Injection: 150 IU/ml in vial.	NOTE. National recommendations may vary. Immunization against rabies: post-exposure (or suspected exposure) treatment, ADULT and CHILD 20 units/kg by infiltration in and around the cleansed wound; if wound not visible or healed or if infiltration of whole volume not possible, give remainder by intramuscular injection into anterolateral thigh.
Rabies vaccine (inactivated)	Injection, inactivated rabies virus prepared in cell culture.	NOTE. Doses may vary between products (consult manufacturers literature)
4. Major and Minor Surgery		
General anaesthetics		
Ketamine	Injection 50 mg/ml 10 ml/vial.	Induction, *by intramuscular injection*, ADULT and CHILD, 6.5–13 mg/kg (10 mg/kg usually produces 12–25 minutes of anaesthesia); maintenance, 50–100% of induction dose as required. Induction, *by intravenous injection* over at least 1 minute, ADULT and CHILD, 1–4.5 mg/kg (2 mg/kg usually produces 5–10 minutes of anaesthesia); maintenance, 50–100% of induction dose as required. Induction, by intravenous infusion of a solution containing 1 mg/ml, ADULT and CHILD, total induction dose 0.5–2 mg/kg; maintenance (using microdrip infusion), 10–45 micrograms/kg/minute, rate adjusted according to response.
Oxygen inhalation	Medicinal gas.	Concentration of oxygen in inspired anaesthetic gases should never be less than 21%.
Thiopental	Powder for injection: 0.5g; (sodium salt) in ampoule.	Induction, *by intravenous injection* usually as a 2.5% (25 mg/ml) solution over 10–15 seconds, ADULT, 100–150 mg (reduced in the elderly or debilitated patients), followed by a further 100–150 mg if necessary according to response after 30–60 seconds; or up to 4 mg/kg (maximum 500 mg); CHILD, 2–7 mg/kg repeated if necessary according to response after 60 seconds.

Local anaesthetics		
Bupivacaine	Injection: 0.25%; 0.5% (hydrochloride) in vial. Injection for spinal anaesthesia: 0.5% (hydrochloride) in 4 ml ampoule to be mixed with 7.5% glucose solution.	Local infiltration, using 0.25% solution, ADULT, up to 150 mg (up to 60 ml). Peripheral nerve block, using 0.25% solution, ADULT, up to 150 mg (up to 60 ml); using 0.5% solution, ADULT, up to 150 mg (up to 30 ml). Lumbar epidural block in surgery, using 0.5% solution, ADULT, 50–100 mg (10–20 ml). Caudal block in surgery, using 0.25–0.5% solution, ADULT, up to 150 mg (up to 30 ml). *Use lower doses for debilitated or elderly patients or in epilepsy or acute illness. Do not use solutions containing preservatives for spinal, epidural, caudal, or intravenous regional anaesthesia.*
Lidocaine	Injection: 1%; (hydrochloride) in vial.	Local infiltration and peripheral nerve block, using 1% solution, ADULT, up to 250 mg (up to 25 ml).
Relaxant antagonists		
Neostigmine	Injection 500 micrograms in 1 ml ampoule. Injection 2.5 mg (methylsulfate) in 1 ml ampoule.	Reversal of non-depolarizing block, by intravenous injection over 1 minute, ADULT, 2.5 mg, followed if necessary by supplements of 500 micrograms to maximum total dose of 5 mg; CHILD, 40 micrograms/kg (titrated using peripheral nerve stimulator).
Opioid Antagonist		
Naloxone	Injection 400 micrograms/ml (Hydrochloride) in 1 ml ampoule.	Over dosage of opioids, *by intravenous injection*, ADULT, 0.4–2 mg repeated at intervals of 2–3 minutes up to a maximum of 10 mg; question diagnosis if respiratory function does not improve; CHILD, 10 micrograms/kg; a subsequent dose of 100 micrograms/kg may be given if no response.
Correction of water/electrolytes and acid – base disturbances		
Sodium lactate (Ringer´s lactate)	Injectable solution: sodium lactate 1/6M, contains the following ions: Na+ 167 mmol/litre, HCO3- (as lactate) 167 mmol/litre. Giving set and needle 500 ml bag.	Fluid and electrolyte replacement or hypovolaemic shock, by intravenous infusion, ADULT and CHILD, determined on the basis of clinical and, whenever possible, electrolyte monitoring.

Sodium chloride	Injectable solution: 0.9% isotonic (equivalent to Na+ 154 mmol/l, Cl- 154 mmol/l).	Fluid and electrolyte replacement, *by intravenous infusion*, ADULT and CHILD, determined on the basis of clinical and, whenever possible, electrolyte monitoring.
Sodium chloride Sodium bicarbonate	Injectable solution: 1.4% isotonic (equivalent to Na+ 167 mmol/l, HCO3- 167 mmol/l). Solution: 8.4% in 10-ml ampoule (equivalent to Na+1000 mmol/l, HCO3- 1000 mmol/l).	Metabolic acidosis, *by slow intravenous injection* of a strong solution (up to 8.4%) or by continuous intravenous infusion of a weaker solution (usually 1.4%), ADULT and CHILD, an amount appropriate to the body base deficit.
Glucose	Injectable solution: 5% isotonic; 50% hypertonic.	Fluid replacement, *by intravenous infusion*, ADULT and CHILD, determined on the basis of clinical and, whenever possible, electrolyte monitoring. Treatment of hypoglycaemia, *by intravenous infusion* of 50% glucose solution into a large vein, ADULT, 25 ml.
Potassium chloride	Injection solution :11.2% in 20ml ampoule (equivalent to K+ 1.5 mmol/ml, Cl- 1.5 mmol/ml)	Electrolyte imbalance, *by slow intravenous infusion,* ADULT and CHILD, depending on the deficit or the daily maintenance requirements.
Water	Injection 10 ml/plastic vial.	In preparations intended for parenteral administration and in other sterile preparations.
Mannitol	Injection solution 20%.	For raised intracranial or intraocular pressure, *by intravenous infusion* as a 20% solution infused over 30–60 minutes, ADULT, 0.25–2 g/kg; CHILD, 0.5–1.5 g/kg. For cerebral edema, *by intravenous infusion* as a 20% solution infused rapidly, ADULT and CHILD, 1 g/kg.
Preoperative medication and sedation for short-term procedures		
Atropine	Injection 1mg (sulfate) in1 ml ampoule.	Premedication, by intravenous injection, ADULT, 300–600 micrograms immediately before induction of anaesthesia, CHILD, 20 micrograms/kg (maximum 600 micrograms); by subcutaneous or intramuscular injection, ADULT, 300–600 micrograms 30–60 minutes before induction; CHILD, 20 micrograms/kg (maximum, 600 micrograms).

Midazolam	Injection: Midazolam (as hydrochloride) 2 mg/ml, 5 ml ampoule.[2]	Sedative in combined anaesthesia, *by intravenous injection*, 30-100 micrograms/kg repeated as required or by continuous intravenous infusion, 30-100 micrograms/kg/hour (ELDERLY lower doses needed); CHILD not recommended.[2] Premedication, *by deep intramuscular injection*, 70-100 micrograms/kg (ELDERLY and debilitated 25-50 micrograms/kg) 20-60 minutes before induction; CHILD 1-15 years 80-200 micrograms/kg.[2] By intravenous injection, 1-2 mg repeated as required (ELDERLY and debilitated 0.5 mg, repeat dose slowly as required).[2]
Cardiac emergencies		
Dopamine	Injection 40 mg/ ml (hydrochloride) in 5 ml vial.	Cardiogenic shock, *by intravenous infusion* into a large vein, ADULT, initially 2–5 micrograms/kg/minute, gradually increased by 5–10 micrograms/kg/minute according to blood pressure, cardiac output, and urine output (seriously ill patients, up to 20–50 micrograms/kg/minute).
Epinephrine	Injection: 100 micrograms/ml (as acid tartrate or hydrochloride) in 10-ml ampoule.	*By intravenous injection* through a central line using epinephrine injection 1:10 000 (100 micrograms/ml), ADULT, 1 mg (10 ml), repeated at 3-minute intervals if necessary.
Ephedrine	Injection 30 mg (hydrochloride)/ml in 1 ml ampoule.	To prevent hypotension during delivery under spinal anaesthesia, *by slow intravenous injection* of solution containing 3 mg/ml, ADULT, 3–6 mg (maximum single dose, 9 mg), repeated if necessary every 3–4 minutes (maximum cumulative dose, 30 mg).
Amiodarone	Injection: 50 mg/ml in 3 ml ampoule (hydrochloride).	For arrhythmia, by intravenous infusion via central venous catheter, initially 5 mg/Kg over 20-120 minutes with ECG monitoring; subsequent infusion given if necessary according to response up to maximum 1.2 g in 24 hours.[2]
Antialergics and medicines used in anaphylaxis		
Epinephrine (adrenaline)	Injection: 100 micrograms/ml (as acid tartrate or hydrochloride) in 10-ml ampoule.	*By slow intravenous injection* using epinephrine injection 1:10 000 (given at a rate of 1 ml/minute), ADULT, 500 micrograms (5 ml); CHILD, 10 micrograms/kg (0.1 ml/kg), given over several minutes.
Hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial.	Anaphylaxis (adjunct), *by slow intravenous injection,* ADULT, 100–300 mg; CHILD up to 1 year, 25 mg; CHILD 1–5 years, 50 mg; CHILD 6–12 years, 100 mg.

Prednisolone	Oral liquid: 5 mg/ml (for children). Tablet: 5 mg; 25 mg.	Allergy (short-term use), *by mouth*, ADULT and CHILD, initially up to 10–20 mg daily as a single dose in the morning (in severe allergy, up to 60 mg daily as a short course of 5–10 days).
5. Mental Health		
Severe sustance abuse, convulsions and anxiety[12]		
Anxiety		
Diazepam	Tablet (scored): 2 mg; 5 mg.*	Anxiety, insomnia (acute), alcohol withdrawal, depression with comorbid anxiety, panic disorder, seizures, neuroleptic induced akathisia, behavioral problems in patients with mania or psychosis and catatonia, tremor, parkinsonism, muscle spasm, complications with hallucinogens or overdose of stimulants, pre-operative medication. For seizures control: Adult: 5 mg IV, Adolescent : 2.5 mg IV, Pediatrics: 0.2 mg IV
Depression		
Fluoxetin*	Tablet: 20 mg (present as hydrochloride)	
Amitriptyline*	Tablet: 25 mg (hydrochloride) * Election based on country ´s availability	Depression, anxiety disorders (i.e. PSTD), chronic pain, fibromyalgia. 25 mg/d.
Psychosis		
Haloperidol	Injection: 5 mg in 1-ml ampoule. Tablet: 2 mg; 5 mg.	Acute and chronic psychoses, acute mania, agitation/aggression, antiemetic, persistent hiccups, Huntington chorea, dementia-related behavioral problems. 0.5– 3 mg/d.
Biperiden *For potential extrapyramidal side effects of haloperidol*	Injection: 5 mg (lactate) in 1-ml ampoule. Tablet: 2 mg (hydrochloride).	Parkinson disease, extrapyramidal side effects. 1 mg/d.
Epilepsy and convulsions		
Phenobarbital	Injection: 200 mg/ml (phenobarbital sodium). Oral liquid: 15 mg/5 ml (phenobarbital). Tablet: 100 mg (phenobarbital).	Generalized tonic-clonic, complex partial seizures; prevention of seizures relating to operative or traumatic neurological events. Child: up to 5 mg/kg daily; Adolescent: 60–180 mg at night; Adult: 1 mg/kg/d.
Diazepam	Injection: 5 mg/ml in 2ml ampoule. **Rectal solution: 5 mg/ml in 0.5 ml; 2ml and 4ml tubes.	

6. Reproductive Health		
Prevention and treatment of sexually transmitted infections (sexual violence, rape)		
Prevention of sexually transmitted diseases		
Condoms		
Gonorrhea		
Ceftriaxone	Powder for injection: 250 mg (as sodium salt) in vial.	*Do not administer with calcium and avoid in infants with hyperbilirubinemia.* *Use in >41 weeks corrected gestational age.* *Ceftriaxone is selected, instead of cefixime, due to its suitability in the whole population, including pregnant women.* Uncomplicated gonorrhoea and gonococcal conjunctivitis, by deep intramuscular injection, ADULT, 125 mg as a single dose
Chlamydia		
Azithromycin	Capsule: 500 mg. Oral liquid: 200 mg/5 ml.	*Only listed for single-dose treatment of genital Chlamydia trachomatis and of trachoma.* Uncomplicated genital chlamydial infections, trachoma, *by mouth*, ADULT over 45 kg, 1 g as a single dose; ADULT, under 45 kg, 20 mg/kg as a single dose.
Trichomoniasis and bacterial vaginosis		
Metronidazole	Oral liquid: 200 mg (as benzoate)/5 ml. Tablet: 500 mg.	*Contraindicated in first trimester of pregnancy.* By mouth, 2 g as a single dose or 1 g orally every 12 hours for 1 day.[8]
7. Skin Infections		
Impetigo, cellulites, erysipelas		
Cefalexin	Oral suspension, cefalexin for reconstitution with water: 250 mg/5ml. Solid oral dosage form: 250 mg.	ADULT: 250 mg every 6 hours or 500 mg every 8-12 hours increased to 1-1.5 g every 6-8 hours for severe infections; CHILD: 25 mg/kg daily in divided doses, doubled for severe infections , max. 100 mg/kg daily; or under 1 year 125 mg every 12 hours, 1-5 years 125 mg every 8 hours, 5-12 years 250 mg every 8 hours.[2]
Clindamycin	Capsule: 150 mg. Injection: 150 mg (as phosphate)/ml. Oral liquid: 75 mg/5 ml.	For the treatment of *penicillin-allergic patients* *By mouth*, ADULT, 150–300 mg every 6 hours, up to 450 mg every 6 hours in severe infections; CHILD, 3–6 mg/kg every 6 hours; *By deep intramuscular injection or by intravenous infusion,*

Clindamycin *Cont.*		ADULT, 0.6–2.7 g daily in 2–4 divided doses, increased up to 4.8 g daily in life-threatening infections (single doses over 600 mg should be given by intravenous infusion only; single doses given by intravenous infusion should not exceed 1.2 g); NEONATE, 15–20 mg/kg daily; CHILD over 1 month, 15–40 mg/kg daily in 3–4 divided doses, increased to at least 300 mg daily, regardless of weight, in severe infections.[2]
Scabies		
Permethrin	Cream: 5%.	Scabies, ADULT and CHILD, apply cream over whole body and wash off after 8–12 hours; if hands area washed with soap within 8 hours of application, treat the hands again; Repeat application after 7 days.
Tinea capitis		
Griseofulvin	Suspension: 125 mg/5ml Tablet: 250 mg	Superficial fungal infections, by mouth, ADULT, 0.5–1 g (but not less than 10 mg/kg) daily with food in single or divided doses; CHILD, 10 mg/kg daily with food in single or divided doses.
NOTE. Duration of treatment depends on the infection and thickness of keratin at the site of infection — at least 4 weeks for skin and hair, at least 6 weeks for scalp ringworm (and in severe infection, up to 3 months); up to 6 months for fingernails and up to 12 months or more for toenails.		
8. Severe Acute Asthma (Bronchospasm)		
Salbutamol	Inhalation (aerosol): 100 micrograms (as sulfate) per dose. Respirator solution for use in nebulizers: 5 mg (as sulfate)/ml.	Relief of acute bronchospasm, *by aerosol inhalation*, inhaled salbutamol via a large-volume spacer or oxygen-driven nebulizer (if available); give 4-10 puff of salbutamol 100 micrograms/metered inhalation, each puff inhaled separately via a large-volume spacer, and repeat at 10-20 minute intervals if necessary or give nebulised salbutamol 5 mg (CHILD under 5 years 2.5 mg, 5-12 years 2.5- 5 mg) 2 *by inhalation of nebulized solution*, ADULT and CHILD over 18 months, 2.5 mg repeated up to 4 times daily; may be increased to 5 mg if necessary (medical assessment should be considered since alternative therapy may be indicated); CHILD under 18 months, clinical efficacy uncertain (transient hypoxaemia may occur—consider oxygen supplementation).

Epinephrine (adrenaline)	Injection: 100 micrograms/ml (as acid tartrate or hydrochloride) in 10-ml ampoule.	*By slow intravenous injection* using epinephrine injection 1:10 000 (given at a rate of 1 ml/minute), ADULT, 500 micrograms (5 ml); CHILD, 10 micrograms/kg (0.1 ml/kg), given over several minutes.
Prednisolone	Oral liquid: 5 mg/ml (for children). Tablet: 25 mg.	By mouth 40-50 mg for at least 5 days. CHILD 1-2 mg/kg by mouth for 3-5 days (CHILD under 2 years max. 40 mg, over 2 years max. 50 mg).[2]

The information about Pharmaceutical Formulations was obtained from 16th WHO Essential Model List (available in: http://www.who.int/medicines/publications/essentialmedicines/en/index.html) and indications and dosages were obtained from WHO Model Formulary 2008 (available in: http://www.who.int/entity/selection_medicines/list/WMF2008.pdf); others are specified in each reference.

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II - MEDIUM PRIORITY (post-disaster management)		
1. Prevention and treatment of communicable diseases		
Tuberculosis		
Prophylaxis	Isoniazid*	Oral liquid: 50 mg/5 ml. Tablet: 100 mg; 300 mg. Tablet (scored): 50 mg.
Treatment ** The listed medicines should be used only in combination*	Rifampicin*	Oral liquid: 20 mg/ml. Solid oral dosage form: 150 mg; 300 mg.
	Isoniazid*	Oral liquid: 50 mg/5 ml. Tablet: 100 mg to 300 mg. Tablet (scored): 50 mg.
	Pyrazinamide*	Oral liquid: 30 mg/ml. Tablet: 400 mg. Tablet (dispersible) 150 mg. Tablet (scored) 150 mg.
	Ethambutol*	Oral liquid: 25 mg/ml. Tablet 400 mg (hydrochloride).
2. Reproductive Health		
Prevention and treatment of sexually transmitted infections (sexual violence, rape)		
Prevention of sexually transmitted diseases	Condoms	
Syphilis	Benzathine benzylpenicillin	Powder for injection: 900 mg (=1.2 million IU) in 5-ml vial; 1.44 g (=2.4 million IU) in 5-ml vial.
	Doxycycline* Alternative regimen recommended for penicillin-allergic patients.	Oral liquid: 25 mg/5 ml; 50 mg/5 ml. Solid oral dosage form: 50 mg; 100 mg (hydrochloride). **Use in children < 8 years of age only for life-threatening infections when no alternative exists.*
HIV post-exposure prophylaxis (PEP)	AZT + 3TC	Tablet: 30 mg + 60 mg; 150 mg+ 300 mg.
Emergency contraception	Levonorgestrel	Tablet: 30 micrograms; 750 micrograms (pack of two); 1.5 mg.
Prevention of pregnancy		
Oral hormonal contraceptives	Ethynil estradiol +levonorgestrel	Tablet: 30 micrograms + 150 micrograms (combined tablets).
Emergency contraception	Levonorgestrel	Tablet: 30 micrograms; 750 micrograms (pack of two); 1.5 mg.
Condoms		

Prevention and health problem related to pregnancy		
Pregnancy induced hypertension	Methyldopa*	Tablet: 250 mg.
For the acute management of the severe pregnancy-induced hypertension	Hydralazine	Powder for injection: 20 mg (hydrochloride) in ampoule. Tablet: 25 mg; 50 mg (hydrochloride).
Eclampsia and severe pre-eclampsia	Magnesium sulfate	Injection: 500 mg/ml in 2-ml ampoule; 500 mg/ml in 10-ml ampoule.
HIV prevention		
ART° for HIV-infected pregnant women who need treatment for their own health		
AZT + 3TC+ NVP		Tablet: 30 mg + 50 mg + 60 mg; 150 mg + 200 mg + 300 mg.
Infants born to HIV-infected women receiving ART for their own health should receive:		
A. For breastfeeding infants: daily NVP from birth until 6 weeks of age.	NVP	Oral liquid: 50 mg/5 ml. Tablet: 200 mg.
B. For non-breastfeeding infants: daily AZT from birth until 6 weeks of age	AZT	Capsule: 100 mg; 250 mg. Oral liquid: 50 mg/5 ml. Solution for IV infusion injection: 10 mg/ml in 20-ml vial. Tablet: 300 mg.
For all HIV-infected pregnant women who are not in need of ART for their own health, ARV°° prophylaxis option consists of: • antepartum daily AZT; • single dose (sd)-NVP at onset of labour *; • AZT + 3TC during labour and delivery*; • AZT + 3TC for 7 days postpartum*.		
AZT	Capsule: 100 mg; 250 mg. Oral liquid: 50 mg/5 ml. Solution for IV infusion injection: 10 mg/ml in 20-ml vial. Tablet: 300 mg.	
NVP	Oral liquid: 50 mg/5 ml. Tablet: 200 mg.	
AZT+ 3TC	Tablet: 30 mg + 60 mg; 150 mg + 300 mg.	
*sd-NVP and AZT+3TC intra- and post-partum can be omitted if mother receives more than 4 weeks of AZT during pregnancy. °°ARV= Antiretrovirals; °ART=Antiretroviral treatment		

3. Treatment of non communicable diseases		
Diabetes		
Diabetes	Insulin soluble	Injection: 40 IU/ml in 10 ml vial; 100 IU/ml in 10 ml vial.
	Intermediate acting insulin	Injection: 40 IU/ml in 10 ml vial; 100 IU/ml in 10 ml vial. *(As compound insulin zinc suspension or isophane insulin).*
	Metformin	Tablet: 500 mg (hydrochloride).
Cardiovascular diseases		
Hypertension and emergency hypertensive	Atenolol	Tablet: 50 mg.
	Hydrochlorothiazide	Tablet: 25 mg. Tablet: 12.5 mg.
	Sodium nitroprusside	Powder for infusion 50 mg amp.
Heart failure	Furosemide	Injection 10 mg/ml 2 ml/ampoule.
	Enalapril	Tablet: 5 mg.
	Dopamine	Injection:40 mg/ml(hydrochloride) in 5ml vial.
Coronary disease	Isosorbide dinitrate	Tablet: 5 mg.
	Amlodipine	Tablet: 5 mg.
Arrhythmias	Amiodarone	Injection: 50 mg/ml in 3-ml ampoule (hydrochloride). Tablet (HCl): 100 mg; 200 mg; 400 mg (hydrochloride).
Respiratory diseases		
Asthma and Chronic Obstructive Pulmonary Disease (COPD)	Budesonide	Inhalation (aerosol): 100 micrograms per dose; 200 micrograms per dose.
	Salbutamol	Inhalation (aerosol): 100 micrograms (as sulfate) per dose. Oral liquid: 2 mg/5 ml.
	Epinephrine (adrenaline)	Injection: 1 mg (as hydrochloride or hydrogen tartrate) in 1-ml ampoule.
	Prednisolone	Oral liquid: 5 mg/ml *. Tablet: 5 mg; 25 mg. ** Restricting its use to children.*
	Ipratropium bromide	Inhalation (aerosol): 20 micrograms/metered dose.

Blood Problems		
Anaemia in pregnancy	Ferrous salt*	Oral liquid: equivalent to 25 mg iron (as sulfate)/ml. Tablet: equivalent to 60 mg iron. **use in anemia in children*
	Folic acid	Tablet: 1 mg; 5 mg.
	Ferrous salt + folic acid	Tablet equivalent to 60 mg iron + 400 micrograms folic acid. *(Nutritional supplement for use during pregnancy).*
Coagulation problems	Heparin sodium	Injection: 1000 IU/ml; 5000 IU/ml in 1-ml ampoule; 20 000 IU/ml in 1-ml ampoule *(not in children).*
	Phytomenadione	Injection: 1 mg/ml; 10 mg/ml in 5-ml ampoule. Tablet: 10 mg.
	Protamine sulphate	Injection: 10 mg/ml in 5-ml ampoule.

III - PUBLIC HEALTH INTERVENTIONS

1. Insecticides

Insecticide compounds and formulations	Class	Dosage (g/m2)	Mode of action	Duration of effective action (months)
A-cypermethrin, WP & SC	Pyrethroid	0.02-0.03	Contact	4-6
Bifenthrin, WP	Pyrethroid	0.025-0.050	Contact	3-6
Cyfluthrin, WP	Pyrethroid	0.02-0.05	Contact	3-6
Deltamethrin, WP & WG	Pyrethroid	0.020-0.025	Contact	3-6
Etofenprox, WP	Pyrethroid	0.1-0.3	Contact	3-6
Lambda – Cyhalo-thrin, WP	Pyrethroid	0.02-0.03	Contact	3-6

2. Water Potabilizer

Water purifier	Sodium dichloroisocyanurate (NaDCC)	Tablet 1.67 g.

3. Disinfectants

Disinfectants	Chlorine base compound	Powder (0.1% available chlorine) for solution.

CONSIDERATIONS AND EVIDENCE-BASED RATIONALE FOR THE SELECTION OF THE EMERGENCIES AND DISASTERS ESSENTIAL MEDICINES LIST (EDEML)

I - High Priority

1. Prevention and Treatment of Communicable Diseases

Malaria

In order to select medicines for the treatment of malaria for includion to the Emergencies and Disasters Essential Medicines List (EDEML), it is necessary to consider available data about this disease in some countries.

There are 6 countries with autochthonous malaria: Haiti, Dominican Republic, Suriname, Belize, Guyana and French Guiana1-3.These countries have both *Plasmodium vivax* and *P. falciparum*.[2]

Suriname, Guyana and French Guiana have reported high rates of *P. falciparum* resistance.[1, 2]

In Suriname choloquine, sulfadoxine-pyrimethamine and mefloquine resistant *P. falciparum* was reported.

Guyana was reported resistant to chloroquine and French Guiana was reported with multidrug resistant *P falciparum* in areas influenced by Brazilian migration.[2]

In Suriname it is recommended the use of artemether-lumefantrine in accordance with WHO recommendation for areas with multidrug resistance.[4-6] The other Caribbean countries are still sensitives to chloroquine.[1, 2]

The EDEML for malaria treatment includes medicines for both: sensitive and resistant parasites. Recommendations for treatment and prevention are based on information about the species of plasmodia present and parasite medicines susceptibility at each specific geographic setting.

Prevention treatment is decided according to the risk of contracting malaria, the prevailing species of malaria parasites in the area, the level and spread of medicines resistance reported from the country and the possible risk of serious side-effects resulting from the use of the various prophylactic medicines.

Where *Plasmodium falciparum* and *P. vivax* both occur, prevention of falciparum malaria takes priority.

If the patient has received prophylaxis treatment, the same medicine should not be used for the curative treatment.[2]

For information about recommended prevention on each Caribbean country, see http://www.who.int/ith/ITH2010.pdf.

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Leptospirosis

Leptospirosis occurs worldwide, in both rural and urban areas and in temperature and tropical climates. In endemic areas, the number of leptospirosis cases may peak during the rainy season and may even reach epidemic proportions in cases of flooding.[1, 2]

Caribbean morbidity due leptospirosis during 2005 (the last report) was 1325 cases with 148 confirmed cases. Only 11 countries notified them and 94% of the cases where reported in 4 countries (Barbados, Jamaica, Suriname, and Trinidad and Tobago).[1]

The prophylaxis with doxycycline was demonstrated to have 95% preventive efficacy against infection when tested in a population from non-endemic areas entering a hazard area for leptospirosis,[3-5] and was found to have a significant protective effect against clinical illness when studied in a population in an endemic area.[3, 6, 7]

No prophylaxis recommendations have been developed for pregnant women and children under 8 years of age.[3]

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Meningitis and Encephalitis

Climatic factors play an important role in the seasonal upsurge of meningococcal disease. Unfavorable climatic conditions and natural disasters may lead to the crowding of people in poorly ventilated dwellings, where spread of virulent meningococcal is optimal.[1]

Epidemics in shelters have mainly been due to N. meningitides serogroup A. Bacterial meningitis, particularly meningococcal meningitis is potentially fatal and is a medical emergency.[2]

Parenteral penicillin or ampicillin is the medicine of choice. Chloramphenicol is a good and inexpensive alternative in situations of catastrophic epidemics of meningococcal meningitis.[2]

Because the rate of secondary disease for close contacts is highest immediately after onset of disease in the index patient, antimicrobial chemoprophylaxis should be administered as soon as possible (ideally <24 hours after identification of the index patient). Conversely, chemoprophylaxis administered >14 days after onset of illness in the index patient is probably of limited or no value. Ciprofloxacin, and ceftriaxone are 90%--95% effective in reducing nasopharyngeal carriage of N. meningitdis and are all acceptable antimicrobial agents for chemoprophylaxis.[3]

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Fever

Fever is a symptom registered with high frequency in these conditions. It is no doubt that the medicine with best benefit/risk ratio is paracetamol (also known as acetaminophen) and can be used in adults as well as in children.

Acute respiratory infections

Population displacement can result in overcrowding in resettlement areas, raising the risk of transmission of certain communicable diseases that are spread from person to person through respiratory droplets such as acute respiratory infections or ARI.

In complex emergencies, acute respiratory infections have received relatively little attention in the humanitarian sector, despite being the largest baseline contributor to disability-adjusted life-years lost and the leading single cause of mortality among children under 5 years worldwide.[1] Acute respiratory infections can involve:

- the upper respiratory tract – common cold, otitis media and pharyngitis;
- the lower respiratory tract – bronchitis, bronchiolitis and pneumonia.

The majority of acute respiratory infections involving only the upper respiratory tract is viral, mild and resolve spontaneously. Acute lower respiratory tract infections (LRTIs) are a major cause of mortality and morbidity in emergency situations. Some 25%–30% of deaths in children under 5 years of age are due to LRTIs; 90% of these deaths are due to pneumonia. It is therefore important that pneumonia is recognized quickly and treated appropriately. Causative organisms may be bacterial (mainly *Haemophilus influenzae* and *Streptococcus pneumoniae*) or viral.[2]

Viruses are the most frequent etiology of bronchitis and bronchiolitis. It is not recommended the use of anti infective medicines for this indication.[3, 4, 5] The virus is transmitted from person to person by direct contact with nasal fluids by airborne droplets and careful attention to hand washing, especially around infants can help prevent the spread of respiratory viruses.

For patients with pneumonia treated in the community, amoxicillin remains the preferred agent at a dose of 500 mg three times daily. Clarithromycin is appropriate as an alternative choice, and for those patients who are hypersensitive to penicillins. Oral amoxicillin + clavulanic acid should be used when infections due to susceptible beta-lactamase-producing organisms is suspected and in chronic obstructive pulmonary disease (COPD) exacerbations.

Oral therapy with amoxicillin and a macrolide is preferred for patients with moderate severity CAP (community acquired pneumonia) according to age, clinical parameters such us cardiac and respiratory rate, mental status and laboratory parameters. When oral therapy is contraindicated, recommended parenteral choices include third generation cephalosporin (ceftriaxone) together with clarithromycin.

For patients with high severity pneumonia, an intravenous combination of a broad spectrum ß-lactamase stable antibiotic such amoxicillin + clavulanic acid together with a macrolide such as clarithromycin is preferred.[6-15]

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2. Gastrointestinal Tract Problems

Diarrhea

Diarrhea is a common cause of morbidity and a leading cause of death among children aged under five years old.[1] Increased incidence of acute diarrhea may occur post-disaster where access to electricity, clean water, and sanitary facilities are limited. In addition, usual hygiene practices may be disrupted and healthcare seeking behaviors may be altered.[2]

Many diarrheal diseases can be prevented by following simple rules of personal hygiene and safe food preparation and safe water. Proper hand washing with soap is instrumental in preventing the spread of illness and should be emphasized for caregivers and persons with diarrheal illnesses.[4] A meta analysis shows that interventions promoting hand washing reduce diar-

rhea episode in children between 32% (Incidence Rate Ratios (IRR) 0.68, 95% CI 0.52- 0.90) and 39% (IRR 0.61, 95% CI 0.4- 0.92).[1]

The primary goal of treating any form of diarrhea—viral, bacterial, parasitic, or non-infectious—is preventing dehydration or appropriately rehydrating dehydrated persons.[2] Fluid replacement is the cornerstone of therapy for diarrhea regardless its etiology.[4] However, specific patient treatment should be determined on the basis of the healthcare provider's clinical judgment. Any questions should be directed to the local health department.[2]

The first line treatment of diarrhea is: Oral rehydrating salts and zinc sulfate.[5, 6, 7]

The decision to treat with antimicrobial therapy should be made on a patient-by-patient basis. Even when a bacterial cause is suspected in an outpatient setting, antimicrobial therapy is not usually indicated among children because most cases of acute diarrhea are self-limited and their duration is not shortened by the use of antimicrobial agents.[2]

Adults may consider treatment based on: fever, bloody or mucoid stool, suspicion of sepsis and in the context of an outbreak of shigellosis, cryptosporidiosis, or giardiasis. Although hand hygiene is the mainstay of prevention, antimicrobial treatment can eliminate carriage and help to control an outbreak if rigorous hand hygiene measures are also observed.[2]

In emergency situations Bacteria such as *Salmonella* (commonly *S. Enteritidis* or *S. Typhimurium*) and *Escherichia coli* can cause diarrhea, but the most severe outbreaks are caused by *Shigella dysenteriae type 1* and *Vibrio cholerae*. Other pathogens that cause diarrhea include protozoa (such as *Giardia lamblia*, *E. histolytica*) and viruses (such as *Rotavirus* and *Norwalk* virus). Diarrhea may occur as one of the symptoms of other infections (e.g. measles). The major complications of diarrhea are dehydration and the negative effect on nutritional status, already damaged in these vulnerable populations.[3]

If required, in presence of bloody diarrhea and with positive stool analysis, antibiotics treatment is indicated.

During the Expert Consultation Meeting it was recommended the inclusion of Ciprofloxacine and Trimethoprim-sulfamethoxazole for these situations.

Cholera

Cholera is an acute diarrheal infection which is caused by the contamination of ingested food or water by the bacterium Vibrio cholerae. The majority of *V. cholerae O:1* infections are asymptomatic.

Approximately 5% of patients that are infected may show signs of a severe form of cholera which is distinguished by a prolific watery diarrhea, vomiting, and dehydration. The main manifestations which are clinical in nature are as follows: the incubation period is generally from 24-48 hours but can vary from 5 hours to 5 days. Vomiting and diarrhea may possibly be accompanied with abdominal cramps. Watery diarrhea has been described as "rice water." There is the absence of fever.

Zinc Supplements

In spite of the infectious etiology, the use of zinc supplements reduces the duration and severity of diarrhea in children. Zinc supplements require the daily recommended dosage of 10-20 mg which is used from the onset of the first symptoms and the 5-7 days afterwards.

It is extremely important to keep a written record of fluid loss and intake in order to adjust the administration of fluids to patients.

The use of antibiotic treatment is recommended. There is the susceptibility of the strains that are isolated in the country of Haiti to date; resistance has been confirmed to trimethroprim-sulfamethoxazole, furazolidone, nalidixic acid, and streptomycin.

The CAREC cholera guidelines:

1. Strengthen surveillance for gastroenteritis, including increasing awareness of and index of suspicion for cholera among health care providers;
2. Promotion of good hygiene measure such as hand washing etc for the disease prevention and control among the general public and health care providers;
3. Response plans (including identification of appropriate location(s) for the treatment of cholera cases) for the public health emergencies be ready for implementation if necessary;
4. Ensure that there are sufficient supplies for response to the possible introduction of cholera cases, including stocks of Oral Rehydration Salts, Antibiotics and IV fluids;
5. Laboratories should ensure the availability of Cary Blair media for appropriate storage of stool specimens from suspected cases;
6. If a suspected case of cholera is acknowledged then the following procedures should be done:
    - A case investigation should be completed and also an investigation form should be filled out;
    - Specimen should be collected and tested (Please refer to no.7);
    - Treatment that is deemed appropriate should be administered with the usage of proper infection control;
    - All contacts should be followed-up and monitored.
7. The procedures in dealing with stool specimen that is obtained from a suspected case are as follows:
    - An aliquot stored in Cary Blair media to CAREC for testing as outlined in guidelines previously received;
    - A routine bacteriology work-up should be done and the results must be submitted to CAREC;

- For the laboratories which are to perform the isolation of Vibrio sp., the isolate should be sent to CAREC for further characterization as outlined in guidelines previously received;
- All specimen sent to CAREC must be go together with the completed CAREC Laboratory Investigation Form.

8. Protocol measures such as quarantine and embargo of merchandise are ineffective and unnecessary in the control of the spread of cholera;
9. When further guidance or assistance is required, CAREC can be reached at the emergency numbers which are available 24/7:
   - For general technical assistance: 868-463-5857;
   - For laboratory specific issues: 868-782-2786.

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Nausea and Vomiting

For nausea and vomiting associated with gastrointestinal disorders, and/or following surgery the best selection is metoclopramide considering its efficacy and safety profile.[1]

Although dimenhydrinate has been used for treatment and prevention of postoperative nausea and vomiting since the fifties, there have been few controlled studies about its efficacy. For that reason we keep metoclopramide which is already in the WHO EML for this indication.

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Gastrointestinal smooth muscle spasms

Hyoscine butylbromide (butylscopolamine) it is quaternary ammonium derivate and it is used in condition associated with visceral spasms.[1]

It is poorly absorbed from gastrointestinal tract and do not pass the blood-brain barrier[2]

avoiding central adverse effects

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3. Injuries

Open injuries have a potential for serious bacterial wound infections, including gas gangrene and tetanus, and these in turn may lead to long term disabilities, chronic wound or bone infection, and death. Wound infection is particularly of concern when injured patients present late for definitive care or in disasters where large numbers of injured survivors exceed available trauma care capacity. Appropriate management of injuries is important to reduce the likelihood of wound infections.

Tetanus has a high case-fatality rate of 70–100% without medical treatment and is globally underreported. Appropriate management of injured survivors should be implemented as soon as possible to minimize future disability and to avert avoidable death.

Disinfectants and antiseptics should be available as well as analgesics to handle pain.

All wounds and injuries should be scrutinized as Clostridium tetani spores that are present in the soil can infect trivial, unnoticed wounds, lacerations and burns.

Patients should systematically receive prophylactic antibiotics and tetanus toxoid vaccine if non-immune, together with tetanus immune globulin if the wound is tetanus-prone.[1]

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Physical Trauma

Common causes of acute pain in emergency situation include surgery, acute illness, trauma, labor, and medical procedures.

Analgesia should be initiated with the most effective analgesic agent having the fewest side effects.

Selection depends on the severity of pain (mild, moderate and severe) and on the efficacy/safety profile.[1-6]

Acetaminophen and non steroidal anti-inflammatory agents (NSAIDs) often are preferred over opiates in the treatment of mild-to-moderate pain. Opioids are the next logical step in the management of acute pain.[7,8]

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Prevention and management of wound wound infection (topical use)

Antiseptic preparations are widely used to treat or prevent superficial infections, but their usefulness on broken skin and wounds has been questioned.

Antiseptic solutions are commonly used to clean wounds but are of doubtful value.

Chlorine-releasing antiseptics solutions are generally regarded as irritant and although there is little direct evidence in patients there is concern that they may delay wound healing.

Cetrimide, chloramine, hydrogen peroxide 3 %, iodophores, and sodium hypochlorite solutions are all reported to be cytotoxic to in vitro or in animal models. Long term or repeated use of these antiseptics for wound toilet should probably be avoided.

Chlorhexidine is an agent with the best benefit /risk ratio.[1]

During the Experts Consultation Meeting, it was recommended to include hydrogen peroxide as an antiseptic to be used for washing wounds.

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Tetanus prevention

Wounds are considered to be tetanus-prone if they are sustained either more than 6 hours before surgical treatment of the wound or at any interval after injury and show one or more of the following: a puncture-type wound, a significant degree of devitalized tissue, clinical evidence of sepsis, contamination with soil/manure likely to contain tetanus organisms, burns, frostbite, and high velocity missile injuries.

For patients with tetanus-prone injuries, WHO recommends Td (tetanus diphtheria vaccine) and TIG (tetanus immune globulin).[1]

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Rabies and venom prevention

Human rabies transmitted by dogs is a priority disease in Haiti. Rabies control is a priority, and a mass vaccination campaign of dogs was underway at the time of the earthquake. There may be an increased risk of rabies transmission from animal bites following emergency and disasters situation.[1]

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4. Major and Minor Surgery

In an emergency situation people may suffer fractures, amputations, neurological traumas as spinal cord injuries, etc. It is not possible to provide optimal case-management in an emergency, since many teams do not have appropriate equipment or materials to stabilize fractures or perform invasive surgery. Therefore, an essential list of resources,is proposed in order to address these issues.[1]

WHO has established different levels of complexity of health care in emergency and essential surgical procedures and the resources to account should be available.[2]

Anaphylactic shock and conditions such as angioedema are medical emergencies that can result in cardiovascular collapse and death. They require prompt treatment of laryngeal oedema, bronchospasm, and hypotension.[3]

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5. Mental Health Problems

In emergency situations, much of the affected population is likely to be burdened by a wide range of symptoms of normal distress caused by severe loss, trauma, continuing danger, and constrained social and living conditions.[1]

Rates of mild and moderate mental disorders (e.g. mild and moderate mood and anxiety disorders, including posttraumatic stress disorder) tend to double in disaster situations, and a small proportion of the adult population will suffer from severe mental disorders. Unfortunately, many Latin American and Caribbean countries have a low coverage and poor response of mental health services in normal conditions. [2, 3]

However, it is important to highlight that many psychosocial problems originated by the emergency may be reduced or even disappear with the use of simple techniques such us psychological first aid, without need for medications.

It is as well very important to consider those who had mental disorders prior to the emergency.[2,3] Their conditions may have been exacerbated by their experiences and lack of basic needs and social supports during and after the emergency. This is an extremely vulnerable group of people that requires especial attention, particularly in trying to ensure the continuation of ongoing treatments.[2]

The minimum provision of psycotropic medicines is one generic anti-psychotic, one anti- Parkinsonian drug (to deal with potential extra-pyramidal side effects of antipsychotics), one anti-convulsant/antiepileptic, one anti-depressant and one anxiolytic (for use in severe substance abuse and convulsions).[4]

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6. Reproductive Health

In emergency situations, population movement often causes breakdown in family and social ties, and erodes traditional values and coping strategies. This can result in higher-risk sexual behavior, which increases the risk of sexually transmitted diseases.

In situation of disasters, persons are often physically and socially powerless, with women and children at particular risk of sexual coercion,[1] abuse or rape. Sexual violence has a significant negative impact on the health of the population. The potential reproductive and sexual health consequences are numerous: unwanted pregnancy, sexually transmitted infections (STIs), and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS).[2,3]

During the Experts Consultation Meeting, it was stressed that violence or rape are not seen often at Caribbean countries, and it was decided to move most of the `proposed medicines for reproductive health to the 2nd level or medium priority as post-disaster management.

In the acute phase post-emergency spontaneous preterm labor and delivery can occur, which are the predominant causes of perinatal mortality and morbidity. The Experts Consultation Meeting recommended that the regular health system should take care of them, and that the EDEML should include only medicines for prevention and management of gonococcal and non-gonococcal infections like Chlamydia, trichomoniasis and bacterial vaginosis.

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7. Skin Infections

In emergency situations, infections occur not only due to crowding but also because of a lack of water and therefore reduced hygiene. These are known as 'water-washed' diseases and include miscellaneous diarrheas, skin/wound infections and infestations (e.g. scabies, impetigo).[1-3]

Skin and soft tissues infections are caused mostly by the gram-positive bacteria Staphylococcus and Streptococcus species.[4] In all skin infections, an important part of treatment is cleaning and thorough drying. Washing with soap and water will often help to prevent infection.[5] Antibiotics are used empirically with consideration for patterns of resistance.[4]

Minor skin and soft-tissue infections are empirically treated with first-generation oral cephalosporins (cefalexin) or clindamycin.[6] For cellulitis a first-generation cephalosporin (cefalexin) should be selected considering it is best benefits risk ratio.[6, 7]

Topical permethrin was selected because it has robust evidence in the treatment of scabies.[8, 9]

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8. Treatment of non communicable diseases (Chronic pathologies)

Non communicable diseases (NCDs) are recognized as an important health concern in emergency situations. Chronic conditions, including cardiovascular disease (hypertension, ischemic heart disease, cerebrovascular disease and heart failure), diabetes, chronic respiratory disease and neuropsychiatric disorders, account for an increasing proportion of the disease burden.

The priorities during the acute phase of an emergency are to treat exacerbations and minimize treatment interruptions which will increase morbidity and mortality during aftermath situations.[1, 2]

Inadequately controlled chronic diseases may present a threat to life and well-being during the emergency response to natural disasters. An estimate of the possible numbers of people who may require treatment for chronic diseases should help in planning a response, but such information for local areas is not easily accessible.

A surveillance system can provide potentially useful baseline information about the numbers of people with chronic diseases and the treatment that they receive; this information can assist the medical and public health community in assessing the needs of people with chronic diseases in the aftermath of disasters and in planning relief efforts.

During the Experts Consultation Meeting, it was recommended to keep only bronchospasm as a non-communicable disease, physiopathological background of severe acute asthma and move out all others communicable health problems to the medium priority level.

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Severe acute asthma (bronchospasm)

Asthma is a disease of increasing prevalence that is a result of genetic predisposition and environmental interactions; it is one of the most common chronic diseases of childhood. Asthma exacerbations and bronchospasm are frequent and severe health problems in emergency situations.[1,2]

COPD exacerbation is an important health problem in emergency situation.[3]

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II - Medium Priority

1. Reproductive Health

In situation of disasters, persons are often physically and socially powerless, with women and children at particular risk of sexual coercion, abuse or rape. Sexual violence has a significant negative impact on the health of the population. The potential reproductive and sexual health consequences are numerous: unwanted pregnancy, sexually transmitted infections (STIs), and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS).[1, 2]

In the acute phase post-emergency spontaneous preterm labor and delivery can occurred, which are the predominant causes of perinatal mortality and morbidity.

There are four classes of tocolytic therapy: magnesium sulphate, β adrenergic agents, calcium channel blockers, and non steroidal anti-inflammatory agents. They are all similar in effectiveness for prolonging pregnancy from 48 hs. to 1 week.[3] In the absence of any clear evidence that one tocolytic is more efficacious than another, relative safety -for maternal and fetal risk-is the main reason for the selection.[4, 5]

Review of the literature does not support the efficacy of magnesium sulfate as a tocolytic. The largest randomized, placebo-controlled trial showed no benefit over placebo.[6-8]

Several reviews showed that women who took betamimetics had significantly higher rates of treatment-related adverse events (leading to treatment discontinuation) compared with others treatment groups.[9-11]

Indomethacin is currently the most common non steroidal anti-inflammatory drug (NSAID) used in the treatment of preterm labor. A Cochrane revision concluded that there is insufficient evidences to define the role of indomethacin in preterm labour.[12] Premature closure of the ductus arteriosus occurs in 10 to 50% of foetuses exposed to indomethacin, specially in later periods of pregnancy (>32 weeks).[13]

A meta-analysis showed that antenatal indomethacin was associated with an increased risk of periventricular leukomalacia (RR 2.0; 95% CI 1.3 -3.1) and necrotising enterocolitis (RR 2.2; 95% CI 1.1 - 4.2).[14] King JF et al have reviewed 12 randomised controlled trials involving 1209 women and showed that nifedipine was associated with a 24 % reduction in the number of delayed delivery for 7 days (RR 0.76 ; 95% CI, 0.60 to 0.97) and 17 % before 34 weeks of gestation (RR 0.83; 95% CI, 0.69 to 0.99). It appeared to reduce the frequency of respiratory

distress syndrome, necrotising enterocolitis, intraventricular hemorrhage and neonatal jaundice and fewer maternal adverse effects than betamimetics.[15] Maternal adverse drug reaction was reduced 68% (RR 0.32; 95%CI 0.24- 0.41) and cessation of treatment for maternal drug reaction was reduced 86% (RR 0.14; 95% CI 0.05-0.44).[15, 16]

So, nifedipine is the medicine with the best benefit/risk ratio for the treatment of preterm labour.

Efforts should be made to ensure that HIV/AIDS patients receiving antiretroviral treatment (ART) do not have their treatment interrupted and that ART is provided for the prevention of mother-to-child transmission of HIV.[17]

The first-line ART regimens recommended for adults and adolescents are selected with consideration for their potency and side-effect profile, the potential for maintenance of future treatment options, anticipated adherence to them, the availability of fixed-dose combinations, co-existent health conditions (such as TB, hepatitis B virus or hepatitis C virus) and actual or potential pregnancy. From these first-line regimens, the recommended regimen for pregnant women is zidovudine (AZT) + lamivudine (3TC) + Neviparine (NVP).[18, 19]

Among breastfeeding infants, there is evidence that daily nevirapine (NVP) for 6 weeks is efficacious in reducing HIV transmission or death. Among non-breastfeeding infants, there is no evidence assessing the efficacy of daily NVP for any duration beyond a single dose at birth. However, there is high quality of evidence that 6 weeks of daily infant AZT prophylaxis in conjunction with maternal antepartum AZT prophylaxis for more than 4 weeks significantly prevents mother-to-child transmission.[19]

In breastfeeding infants, maternal ARV prophylaxis should be coupled with daily administration of NVP to the infant from birth until one week after all exposure to breast milk has ended. In non-breastfeeding infants, maternal ARV prophylaxis should be coupled with daily administration of AZT from birth until 6 weeks of age.[3]

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2. Treatment of non-communicable diseases

As it was stressed before, non communicable diseases (NCDs) are recognized as an important health concern in emergency situations. Chronic conditions, including cardiovascular dis-

ease (hypertension, ischemic heart disease, cerebrovascular disease and heart failure) diabetes, chronic respiratory disease and neuropsychiatric disorders, account for an increasing proportion of the disease burden.[1]

After Hurricane Katrina roared through the Gulf Coast region on August 2005, the immediate concerns among the public health and medical community were infectious diseases, injuries, and environmental risks, and the overriding goal was preservation of life.

However, with the devastation of the regional infrastructure, including the medical sector, and the subsequent large scale displacement of residents from the affected areas, treatment of chronic diseases emerged as a critical concern.

Inadequately controlled chronic diseases may present a threat to life and well- being in the immediate wake of natural disasters, but their treatment traditionally has not been recognized as a public health or medical priority.

In interviews with medical personnel in hurricane-affected areas, a leading concern expressed was the urgency of treating people with chronic diseases such as diabetes, cardiovascular disease, hypertension, and kidney disease.

Hurricane Katrina made it clear that the treatment of chronic diseases after a natural disaster should be a public health and medical priority.[2] Chronic illnesses accounted for 33% of the medical visits. Excluding injuries, the majority of medical visits were for endocrine, cardiovascular or psychiatric disorders.

After the 1992 Hurricane Iniki in Kauai, diabetes-related deaths increased 161%. Cardiovascular-associated morbidity and mortality is known to increase dramatically during disasters.[3]

Immediately after a disaster, rescue efforts are critically important. However, in the following days, the unmet needs of patients with chronic diseases may become a threat to their lives and well-being.

The need to treat chronic conditions is especially magnified when there are catastrophic disruptions of the medical infrastructure, including pharmacies, when access to medical care and medications is severely compromised or totally cut off, and when large-scale evacuations of the population occur.

Little has been published about treating chronically ill people during disasters. Perhaps this is because many of the disasters have occurred in poor countries where chronic disease has been historically less of a health priority. Or perhaps in wealthier countries, catastrophic damage to the medical infrastructure is uncommon, so patients with chronic diseases continue to receive care.

One investigation in St. Thomas, Virgin Islands, after it was devastated by Hurricane Marilyn, found that antihypertensive medications and insulin-loaded syringes topped the list of needs among the elderly.[2]

Chronic obstructive pulmonary disease (COPD) is a chronic disease of the airways characterized by the gradual progressive loss of lung function. The prevalence and mortality of COPD

have increased over the past two decades. In 2000, chronic lower respiratory disease was one of the ten leading causes of death.[4,5]

During the Expert Consultation Meeting, there was the recommendation to move down to the 2nd level of Median priority medicines , all those addressed to the prevention and management of sexually transmitted infections, care of normal delivery and preterm labor, prevention and management of pregnancy and diseases associated with pregnancy.

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Blood Problems

Food shortages and malnutrition are common features of emergency situations in developing countries. Ensuring that the food and nutritional needs of an emergency-affected population are met is often the principal component of the humanitarian response to an emergency.

When the nutritional needs of a population are not met, this may result in protein–energy malnutrition and micronutrient deficiencies such as iron-deficiency: anaemia, and vitamin A deficiency.[1] It is important to be aware of these needs in order to avoid increases in morbidity and mortality associated to ARI (acute respiratory infections) in children of developing countries.

On the other hand, major surgery and CV problems may require life-savings anticoagulant treatments.

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III - Public Health Interventions

1. Insecticides

For malaria prevention, the use of insect repellents, insecticide –treated nettings and indoor residual spraying (IRS) against malaria vectors is recommended. It means spraying a persistent insecticide into the inside walls and ceilings or the underside of the roof and eaves of houses, in order to kill mosquitoes when they come indoors to feed and rest.

To be effective as a community control measure, IRS requires coverage of at least 85% of dwellings, ensuring that the majority of mosquitoes are exposed to the insecticides and it must be sprayed with insecticide before the expected peak transmission season.

Any of the insecticides recommended by WHO can be used if available locally and known to be effective in the country A list of selected insecticides which was based on the best benefit/ risk ratio for indoor residual spraying against malaria vectors was proposed.[1]

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2. Water Purifier

Water treatment using sodium hypochlorite (NaOCl) has been recognized as a cost- effective means of reducing the heavy burden of diarrhea and other waterborne diseases, especially among populations without access to improved water supplies. Sodium dichloroisocyanurate (NaDCC), which is widely used in emergencies, is an alternative source of chlorine that may present certain advantages over NaOCl for household-based interventions in development settings. There is solid evidence in the available literature concerning its safety, microbiological effectiveness and health outcomes. It is included in the WHO EML.

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3. Disinfectants

2. In emergency and disasters situations, disinfectants should be used in hospitals, campaign tents, mobile clinics, etc for control and prevention of infection. They destroy or inhibit the growth of pathogenic microorganisms and are used mainly on materials and surfaces.

ALPHABETICAL ORDER OF THE EMERGENCIES AND DISASTERS ESSENTIAL MEDICINES LIST

I - HIGH PRIORITY	
Amiodarone	Injection: 50 mg/ml in 3-ml ampoule (hydrochloride)
Amitriptyline	Tablet: 25 mg (hydrochloride)
Amoxicillin	Powder for oral liquid: 250 mg (anhydrous) /5 ml
Amoxicillin	Solid oral dosage form: 500 mg (anhydrous)
Amoxicillin + clavulanic acid	Tablet: 500 mg + 125 mg
Amoxicillin + clavulanic acid	Powder for injection: amoxicillin 1g + clavulanic acid 200mg
Amoxicillin + clavulanic acid	Oral liquid: 250 mg amoxicillin + 62.5 mg clavulanic acid/5 ml
Antitetanus immunoglobulin (human)	Injection: 500 units/vial
Antivenom immunoglobulins	Injection
Artemether + lumefantrine	Tablet 20 mg + 120 mg
Artesunate	Tablet: 50 mg
Artesunate	Injection: ampoules, containing 60 mg anhydrous artesunic acid with a separate ampoule of 5 % sodium bicarbonate solution
Atropine	Injection 1mg (sulfate) in 1 ml ampoule
Azithromycin	Capsule: 500 mg
Azithromycin	Oral liquid: 200 mg/5 ml
Biperiden	Injection: 5 mg (lactate) in 1-ml ampoule
Biperiden	Tablet: 2 mg (hydrochloride)
Bupivacaine	Injection: 0.25% (hydrochloride) in vial
Bupivacaine	Injection: 0.5% (hydrochloride) in vial
Bupivacaine	Injection for spinal anaesthesia: 0.5% (hydrochloride) in 4 ml ampoule to be mixed
Cefalexin	Powder for reconstitution with water: 250 mg/5ml
Cefalexin	Solid oral dosage form: 250 mg
Ceftriaxone	Powder for injection: 250 mg (as sodium salt) in vial
Ceftriaxone	Powder for injection: 1 g (as sodium salt) in vial
Chloramphenicol	Oily suspension for injection: 0.5 g (as sodium succinate)/ml in 2-ml ampoule
Chlorhexidine	Solution 5% , 1L

Chloroquine	Oral liquid 50 mg (as phosphate or sulfate)/5 ml
Chloroquine	Tablet 150 mg (as phosphate or sulfate)
Ciprofloxacin	Tablet: 250 mg (as hydrochloride)
Clarithromycin	Tablet: 250 mg
Clarithromycin	Pediatric suspension: clarithromycin for reconstitution with water 125 mg/5 ml
Clarithromycin	Power for injection: 500 mg vial
Clindamycin	Capsule: 150 mg
Clindamycin	Oral liquid: 75 mg/5 ml
Clindamycin	Injection: 150 mg (as phosphate)/ml
Codeine	Tablet: 15 mg (phosphate)
Condoms	
Diazepam	Tablet: 2mg; 5mg
Diazepam Injection	5mg/ml in 2ml ampoule
Diazepam Rectal solution	5mg/ml in o.5ml; 2m and 4ml tubes
Diclofenac Potassium	Tablet: 50 mg
Diphtheria and tetanus vaccine (DT)	Injection: 0.5 ml
Dopamine	Injection: 40 mg/ml (hydrochloride) in 5ml vial
Doxycycline	Solid oral dosage form: 100 mg: Capsule 100 mg (as hydrochloride), Tablet (dispersible) 100 mg (as monohydrate)
Doxycycline	Intravenous infusion of a solution containing 0,1 to 1 mg/ml as hydrochloride
Ephedrine	Injection 30 mg (hydrochloride)/ml in 1 ml ampoule
Epinephrine	Injection: 100 micrograms/ ml (as hydrochloride or acid tartrate) in 10 ml ampoule
Fluoxetin	Solid oral dosage form: 20 mg (present as hydrochloride)
Glucose	Injectable solution: 50 % hypertonic
Glucose	Injectable solution: 5 % isotonic
Griseofulvin	Suspension: 125 mg/ml
Griseofulvin	Tablet: 250 mg
Haloperidol	Injection: 5 mg in 1-ml ampoule
Haloperidol	Tablet: 2 mg
Haloperidol	Tablet: 5 mg
Hydrocortisone	Powder for injection: 100 mg (as sodium succinate) in vial
Hydrogen Peroxide	Solution 30% (100 vol.)
Hyoscine Butylbromide	Tablet: 10 mg
Hyoscine Butylbromide	Injection: 20 mg/ml, amp 1 ml
Ibuprofen	Tablet: 200 mg
Ibuprofen	Tablet: 400 mg
Ibuprofen	Oral liquid: 100 mg/5 ml
Ketamine	Injection 50 mg/ml 10 ml/vial

Lidocaine	Injection: 1% (hydrochloride) in vial
Mannitol	Injection solution 20%
Mefloquine	Tablet 250 mg as hydrochloride
Metoclopramide	Injection: 5 mg (hydrochloride)/ml in 2-ml ampoule
Metoclopramide	Tablet: 10 mg (hydrochloride)
Metronidazole	Injection: 500 mg in 100-ml vial
Metronidazole	Oral liquid: 200 mg (as benzoate)/5 ml
Metronidazole	Tablet: 500 mg
Midazolam	Injection: 2 mg/ml, 5 ml ampoule
Morphine	Injection: 10 mg (morphine hydrochloride or morphine sulfate) in 1-ml ampoule
Morphine	Oral liquid: 10 mg (morphine hydrochloride or morphine sulfate)/5 ml
Morphine	Tablet (prolonged release): 10 mg (morphine sulfate)
Morphine	Tablet (prolonged release): 60 mg (morphine sulfate)
Naloxone	Injection 400 micrograms/ml (hydrochloride) in 1 ml ampoule
Neostigmine	Injection 500 micrograms in 1 ml ampoule
Neostigmine	Injection 2.5 mg (methylsulfate) in 1 ml ampoule
Oral rehydration salts	Powder for dilution in 200 ml
Oral rehydration salts	Powder for dilution in 500 ml
Oxygen inhalation	Medicinal gas
Paracetamol	Oral liquid: 125 mg/5 ml
Paracetamol	Suppository: 100 mg
Paracetamol	Tablet: 500 mg
Penicillin G (benzylpenicillin)	Powder for injection: 600 mg (= 1 million IU) (sodium or potassium salt) in vial
Penicillin G (benzylpenicillin)	Powder for injection: 3 g (= 5 million IU) (sodium or potassium salt) in vial
Permethrin	Cream: 5%
Phenobarbital	Injection: 200 mg/ml (phenobarbital sodium)
Phenobarbital	Oral liquid: 15 mg/5 ml
Phenobarbital	Tablet: 100 mg
Potassium chloride	Injection solution: 11.2% in 20 ml Ampoule (equivalent to K+ 1.5 mmol/ml, Cl-1.5 mmol/ml)
Prednisolone	Oral liquid: 5 mg/ml
Prednisolone	Tablet: 5 mg
Prednisolone	Tablet: 25 mg
Primaquine	Tablet 15 mg (as diphosphate)
Quinine	Tablet 300 mg (sulfate or bisulfate)
Quinine	Injection 300 mg quinine hydrochloride/ml in 2 ml ampoule
Rabies immunoglobulin	Injection: 150 IU/ml in vial

Rabies vaccine	Injection
Salbutamol	Inhalation (aerosol): 100 micrograms (as sulfate) per dose
Salbutamol	Respirator solution for use in nebulizers: 5 mg (as sulfate)/ml
Sodium bicarbonate	Injectable solution: 1.4 % isotonic
Sodium bicarbonate	Injectable solution: 8.4 % in 10 ml ampoule
Sodium chloride	Injectable solution: 0.9 % isotonic
Sodium lactate (Ringer´s lactate)	Injectable solution: sodium lactate 1/6 M
Sulfamethoxazole-Trimethoprim	Injection: 80 mg + 16 mg/ml in 5-ml ampoule
Sulfamethoxazole-Trimethoprim	Oral liquid: 200 mg + 40 mg/5 ml
Sulfamethoxazole-Trimethoprim	Tablet: 400 mg + 80 mg
Suxamethonium	Powder for injection (chloride) in vial
Thiopental	Powder for injection: 0.5g (sodium salt) in ampoule
Vecuronium	Powder for injection 10 mg (bromide) in vial
Water	Injection 10 ml/plastic vial
Zinc sulfate	Oral liquid: in 10 mg per unit dosage forms
Zinc sulfate	Tablet dispersible 20 mg
II - MEDIUM PRIORITY	
Amiodarone	Tablet : 100 mg (hydrochloride)
Amiodarone	Tablet : 200 mg (hydrochloride)
Amiodarone	Tablet : 400 mg (hydrochloride)
Amiodarone	Injection: 50 mg/ml in 3 ml ampoule (hydrochloride)
Amlodipine	Tablet: 5 mg
Atenolol	Tablet 50 mg
AZT (zidovudine)	Capsule: 100 mg
AZT (zidovudine)	Capsule: 250 mg
AZT (zidovudine)	Oral liquid: 50 mg/5 ml
AZT (zidovudine)	Solution for IV infusion injection: 10 mg/ml in 20-ml vial
AZT (zidovudine)	Tablet: 300 mg
AZT + 3TC (zidovudine + lamivudine)	Tablet: 30 mg + 60 mg
AZT + 3TC (zidovudine + lamivudine)	Tablet: 150 mg + 300 mg
AZT + 3TC+ NVP (zidovudine + lamivudine+ nevirapine)	Tablet: 30 mg + 50 mg + 60 mg
AZT + 3TC+ NVP (zidovudine + lamivudine+ nevirapine)	Tablet: 150 mg + 200 mg + 300 mg
Benzathine Benzylpenicillin	Powder for injection: 900 mg benzylpenicillin (=1.2 million IU) in 5-ml vial
Benzathine Benzylpenicillin	Powder for injection: 1.44 g benzylpenicillin (=2.4 million IU) in 5-ml vial
Budesonide	Inhalation (aerosol): 100 micrograms per dose
Budesonide	Inhalation (aerosol): 200 micrograms per dose

Condoms	
Dopamine	Injection: 40 mg/ml (hydrochloride) in 5 ml vial
Doxycycline	Oral liquid: 25 mg/5 ml
Doxycycline	Oral liquid: 50 mg/5 ml
Doxycycline	Solid oral dosage form: 50 mg (hydrochloride)
Doxycycline	Solid oral dosage form: 100 mg (hydrochloride)
Enalapril	Tablet 5 mg
Epinephrine (adrenaline)	Injection: 1 mg (as hydrochloride or hydrogen tartrate) in 1 ml ampoule
Ethynil estradiol + levonorgestrel	Tablet: 30 micrograms + 150 micrograms (combined tablets)
Ferrous salt	Oral liquid: equivalent to 25 mg iron (as sulfate)/ml
Ferrous salt	Tablet: equivalent to 60 mg iron
Ferrous salt + folic acid	Tablet equivalent to 60 mg iron + 400 micrograms folic acid
Folic acid	Tablet: 1 mg
Folic acid	Tablet: 5 mg
Furosemide	Injection 10 mg/ml 2 ml/ampoule
Heparin sodium	Injection: 1000 IU/ml in 1-ml ampoule
Heparin sodium	Injection: 5000 IU/ml in 1-ml ampoule
Heparin sodium	Injection: 20000 IU/ml in 1-ml ampoule
Hydralazine	Powder for injection: 20 mg (hydrochloride) in ampoule
Hydralazine	Tablet: 25 mg (hydrochloride)
Hydralazine	Tablet: 50 mg (hydrochloride)
Hydrochlorothiazide	Tablet 25 mg
Hydrochlorothiazide	Tablet 12.5 mg
Insulin soluble	Injection: 40 IU/ml in 10 ml vial
Insulin soluble	Injection: 100 IU/ml in 10 ml vial
Intermediate acting insulin	Injection: 40 IU/ml in 10 ml vial
Intermediate acting insulin	Injection: 100 IU/ml in 10 ml vial
Ipratropium bromide	Inhalation (aerosol): 20 micrograms/metered dose
Isoniazid	Oral liquid: 50 mg/5 ml
Isoniazid	Tablet: 100 mg
Isoniazid	Tablet: 300 mg
Isoniazid	Tablet (scored): 50 mg
Isosorbide dinitrate	Tablet: 5 mg
Levonorgestrel	Tablet: 30 micrograms
Levonorgestrel	Tablet: 750 micrograms
Levonorgestrel	Tablet: 1.5 mg
Magnesium sulfate	Injection: 500 mg/ml in 2-ml ampoule
Magnesium sulfate	Injection: 500 mg/ml in 10-ml ampoule
Metformin	Tablet: 500 mg (hydrochloride)

Methyldopa	Tablet: 250 mg
NVP (nevirapine)	Oral liquid: 50 mg/5 ml
NVP (nevirapine)	Tablet: 200 mg
Phytomenadione	Injection: 1 mg/ml in 5-ml ampoule
Phytomenadione	Injection: 10 mg/ml in 5-ml ampoule
Phytomenadione	Tablet: 10 mg
Prednisolone	Oral liquid: 5 mg/ml
Prednisolone	Tablet: 5 mg
Prednisolone	Tablet: 25 mg
Protamine sulphate	Injection: 10 mg/ml in 5-ml ampoule
Pyrazinamide	Oral liquid: 30 mg/ml
Pyrazinamide	Tablet: 400 mg
Pyrazinamide	Tablet (dispersible): 150 mg
Pyrazinamide	Tablet (scored): 150 mg
Rifampicin	Oral liquid: 20 mg/ml
Rifampicin	Solid oral dosage form: 150 mg
Rifampicin	Solid oral dosage form: 300 mg
Salbutamol	Oral liquid: 2 mg/5 ml
Salbutamol	Inhalation (aerosol): 100 micrograms (as sulfate) per dose
Sodium nitroprusside	Powder for infusion 50 mg amp
III- PUBLIC HEALTH INTERVENTIONS	
Chlorine base compound	Powder (0.1% available chlorine) for solution
Pyrethroid (insecticides)	See main document
Sodium dichloroisocyanurate (NaDCC)	Tablet 1.67 g

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525 Twenty-third Street, N.W.
Washington, D.C. 20037
disaster-publications@paho.org