

COMMUNICABLE DISEASE TOOLKIT

WHO/CDS/2005.30

Indonesia

Communicable disease profile



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INTRODUCTION

The purpose of this document is to provide public health professionals in UN agencies, NGOs, donor agencies and others working in tsunami affected areas of Indonesia with up-to-date information on the major communicable disease threats faced by the population. The list of endemic and epidemic-prone diseases has been selected on the basis of the burden of morbidity and mortality. Diseases for which there are global eradication or elimination goals are also included. The document outlines the burden of communicable diseases in Indonesia for which data are available, provides data on recent outbreaks in the country and presents disease-specific guidelines on the prevention and control of these diseases. The profile will be updated on an on-going basis to incorporate data being collected by the WHO/MOH surveillance system being implemented in collaboration with partner agencies in the field.

The control of communicable diseases represents a major challenge to those working with the Ministry of Health to provide health care services in tsunami affected areas. It is hoped that this document will facilitate the coordination of communicable disease control activities among all agencies during the emergency, rehabilitation and reconstruction phases.

1. ACUTE LOWER RESPIRATORY INFECTIONS (ALRI) – CHILDREN AGED UNDER 5 YEARS

DESCRIPTION

Infectious agent	Bacteria: the most common are likely to be <i>Streptococcus pneumoniae</i> and <i>Haemophilus influenzae</i> (and, to a lesser extent, <i>Staphylococcus aureus</i>). Several respiratory viruses.
Case definition	<p>Clinical case definition "Pneumonia" is used at government health facilities as an action-oriented classification for management purposes according to both the ALRI and Integrated Management of Childhood Illnesses (IMCI) guidelines. It is therefore likely to include lower ALRI clinically presenting with similar signs and symptoms, such as pneumonia, bronchiolitis and bronchopneumonia.</p> <p>Acute lower respiratory tract infections are a major cause of mortality and morbidity in emergency situations. The majority of acute respiratory infections involve the upper respiratory tract only, are mild and resolve spontaneously. However, 25-30% of deaths in children under 5 years of age are due to ALRI, 90% of which are due to pneumonia. It is therefore important that pneumonia is recognized quickly and treated appropriately.</p> <p>The classification of cases aged under 5 years according to the national IMCI guidelines, which differ slightly from the ALRI guidelines, is as indicated below.</p> <p>Children aged 2 months up to 5 years:</p> <ul style="list-style-type: none"> • Pneumonia <i>Symptoms:</i> Cough or difficult breathing; and <i>Signs:</i> 50 or more breaths per minute for infants aged 2 months up to 1 year, or 40 or more breaths per minute for children aged 1 up to 5 years old; and No general danger signs, chest indrawing or stridor in a calm child. • Severe pneumonia or very severe disease <i>Symptoms:</i> Cough or difficult breathing and any general danger signs or chest indrawing or stridor in a calm child. <i>General danger signs:</i> unable to drink or breastfeed; vomits everything; convulsions; lethargic or unconscious. <p>Infants aged under 2 months:</p> <p>Severe cases in young infants are classified broadly as "Possible serious bacterial infection", based on the presence of any of 16 signs or symptoms, among which are also respiratory signs such as fast breathing (60 or more breaths per minute), severe chest indrawing, nasal flaring, grunting and wheezing. Other signs include also fever or low body temperature, typical signs of infection (ear and skin), danger signs and feeding problems.</p>
Mode of transmission	Airborne by droplet spread.
Incubation	Depends on the infective agent; usually 2–5 days.
Period of communicability	Depends on the infective agent; usually during the symptomatic phase.

EPIDEMIOLOGY

Burden	<p>No country specific information is available at this time. However, pneumonia is reported as one of the leading causes of death in children aged under 5 years throughout the country.</p> <p>➤ ALRI represented 20% of outpatient visits in the under-fives and were responsible for 41% of hospital admissions for the same age group in 1997, according to data from the Federal Ministry of Health. Pneumonia caused 16% of deaths in paediatric hospitals in 1996; acute respiratory infections were responsible for 19% of hospital deaths in the under-fives in 1997.</p> <p>Source: Report on IMCI early implementation phase in Indonesia., Primary Health Care, Federal Ministry of Health, November 1999.</p>
Geographical distribution	Throughout the country.
Seasonality	An ALRI peak is likely to occur in the colder months.
Alert threshold	An increase in the number of cases above the level expected for the time of the year
Recent epidemics in the country	No data available.

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Influx of non-immune population or infected individuals into areas of new pathogens. Crowding situations of internally displaced populations (IDPs) in the new areas may put them at higher risk of developing ALRI.
Overcrowding	Yes	Overcrowding increases the risk of developing ALRI.
Poor access to health services	Yes	<p>Access to services and drugs varies considerably between areas, especially in rural areas. High attrition rates of government health care providers, including those trained in child health (IMCI), are high and represent a major concern. Immunization coverage is low nationally, with rates of 51% for measles, less than 50% for DPT3 and 27% for a fully immunized child in 2001. (Source for immunization rates: <i>Multiple indicator cluster survey</i>, Indonesia, 2000).</p> <p>Prompt identification and treatment of cases by appropriate healthcare providers is the most important control measure.</p> <p>Without proper treatment, the case-fatality rate can be very high (20% or more in emergency situations).</p>
Food shortages	Yes	Food insecurity is likely to occur amongst IDPs. Additional risk factors include: poor breastfeeding practices (less than 20% of infants aged under 4 months are exclusively breastfed), likely high malnutrition indicators (low birth weight, malnutrition, vitamin A deficiency) and poor feeding practices during illness (Source: <i>Multiple indicator cluster survey</i> , Indonesia, 2000).
Lack of safe water and poor sanitation	Yes	58% of the population has access to sanitary means of excreta disposal, the percentage being less than 20% for the poor households nationally. Access to sources of safe water varies considerably, especially by standards of living, with the poor having very limited access to them. (Source: <i>Multiple indicator cluster survey</i> , Indonesia, 2000).
Others	Yes	Indoor air pollution. Low temperatures may increase the relative risk of children's acquiring pneumonia.

Risk assessment conclusions	ALRI represent one of the major leading causes of death in children aged under 5 years in Indonesia. Inadequate feeding practices, food insecurity and overcrowding among IDPs, low immunization coverage, limited access to high-quality health care (trained staff and drugs) are likely to increase children's risk to illness and death, especially among rural populations and the poor.
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PREVENTION AND CONTROL MEASURES

Case management	<p>The priority is early recognition and adequate treatment of cases.</p> <p>The first-line antibiotic for cases aged under 5 years classified as pneumonia is co-trimoxazole; the second-line antibiotic is amoxicillin.</p> <p>Pre-referral antibiotics for severe cases that cannot tolerate oral antibiotics or for treatment of severe cases that cannot be referred are:</p> <ul style="list-style-type: none"> – intramuscular chloramphenicol for children aged 2 months up to 5 years; and – intramuscular benzylpenicillin <i>and</i> gentamicin for infants aged under 2 months. <p>Children with fever, in addition to cough or difficult breathing, may also be treated for malaria according to their exposure to malaria risk (high vs. low malaria risk areas) and laboratory results (blood film) if these services are available.</p> <p>Supportive measures such as continued feeding to avoid malnutrition, vitamin A if indicated, antipyretics to reduce high fever and protection from cold (especially keeping young infants warm) are part of integrated case management. Prevention of low blood glucose is carried out for severe cases.</p> <p>Integrated management of illness is practiced in any sick child seen by a provider trained in IMCI.</p> <p>Proper advice is given to caretakers of non-severe cases on home care, including compliance with antibiotic treatment instructions.</p> <p>Signs of malnutrition are assessed as this increases the risk of death due to pneumonia. Severely malnourished children (weight-for-height index <70%) must be referred to hospital.</p>
Prevention	<p>Health education on early danger signs for prompt care-seeking, good ventilation of housing and avoiding overcrowding.</p> <p>Adequate feeding, including exclusive breastfeeding, to avoid malnutrition.</p> <p>Improved immunization coverage.</p>
Immunization	<p>Measles, diphtheria and pertussis (whooping cough) immunization is effective in reducing the impact of ALRI. Immunization coverage rates for these antigens are currently suboptimal in Indonesia.</p>

2. BACILLARY DYSENTERY (SHIGELLOSIS)

DESCRIPTION

Infectious agent	Bacterium: genus <i>Shigella</i> , of which <i>Shigella dysenteriae</i> type 1 (Sd1) causes the most severe disease and is the only strain responsible for epidemics.
Case definition	<p>Case classification</p> <p>Suspected: Diarrhoea with visible blood in the stools.</p> <p>Confirmed: A case corresponding to the clinical case definition with isolation of <i>Shigella</i> from stools.</p>
Mode of transmission	Faecal–oral route, particularly through contaminated water and food.
Incubation	Incubation period is usually 1–3 days; may be up to 1 week for <i>S. dysenteriae</i> type 1.
Period of communicability	During acute infection and until 4 weeks after illness (without treatment). With appropriate treatment 2–3 days. Asymptomatic carriers exist.

EPIDEMIOLOGY

Burden	Although many suspected cases exist, most cases have not been confirmed.																											
Geographical distribution	Diffuse distribution with no foci.																											
Seasonality	Cases occur throughout the year. Seasonal incidence patterns are not constant over years.																											
Alert threshold	Five or more linked cases must be investigated further.																											
Recent epidemics in the country	<ul style="list-style-type: none"> Reemergence <i>Shigella dysenteriae</i> in the late 90s after a reported 15 years absence (Data source: Subekti <i>et al.</i>, 2001, Emerging Infectious Disease). <p>Cases of dysentery reported from Aceh 2000 – 2002.</p> <table border="1"> <thead> <tr> <th colspan="3">2000</th> <th colspan="3">2001</th> <th colspan="3">2002</th> </tr> <tr> <th>< 5</th> <th>≥ 5</th> <th>Deaths</th> <th>< 5</th> <th>≥ 5</th> <th>Deaths</th> <th>< 5</th> <th>≥ 5</th> <th>Deaths</th> </tr> </thead> <tbody> <tr> <td>3032</td> <td>10589</td> <td>0</td> <td>2295</td> <td>9048</td> <td>0</td> <td>1455</td> <td>5330</td> <td>0</td> </tr> </tbody> </table> <p>Data source: MOH/Indonesia, 2002.</p>	2000			2001			2002			< 5	≥ 5	Deaths	< 5	≥ 5	Deaths	< 5	≥ 5	Deaths	3032	10589	0	2295	9048	0	1455	5330	0
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3032	10589	0	2295	9048	0	1455	5330	0																				

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Spread of the infectious agent.
Overcrowding	Yes	Very important for transmission of the disease.
Poor access to health services	Yes	Early detection and containment of cases are paramount in reducing transmission. Without proper treatment, the case-fatality rate of <i>S. dysenteriae</i> type 1 can be as high as 10% in children aged under 10 years.
Food shortages	Yes	Malnutrition increases gastrointestinal tract susceptibility to invasiveness of the organism and severity of disease.
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	No	Contaminated food, lack of soap and poor hygiene are also very important risk factors.

Risk assessment conclusions	<p>Overcrowding, lack of safe water, and inadequate sanitation increase the risk of infection.</p> <p>The risk of epidemics of <i>S. dysenteriae</i> type 1 is high in camp settings .</p> <p>Early detection of cases and institution of antibiotic therapy is essential.</p> <p>Resistance to ampicillin, trimethoprim, sulfamethoxazole, chloramphenicol, tetracycline and cephalothin has been recorded in Indonesia (Tjaniadi <i>et al</i>, 2003).</p>
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PREVENTION AND CONTROL MEASURES

Case management	<p>Early and appropriate therapy is very important: treatment with an effective antimicrobial can reduce the severity and duration of shigellosis. Selection depends on resistance patterns of the bacteria and drug availability.</p> <p>The problem of rapid acquisition of antimicrobial resistance in treating <i>Shigella</i> dysentery is a cause of concern. It is therefore important to confirm the sensitivity of <i>S. dysenteriae</i> to antibiotics in the early stages of an outbreak of shigellosis. Resistance patterns may vary during the course of an outbreak and regular stool sampling is required. Ciprofloxacin is the current first-line antibiotic of choice recommended for treatment of <i>S. dysenteriae</i> type 1.</p> <p>Supportive treatment using oral rehydration salts (ORS), continued feeding (frequent small meals) and antipyretics to reduce high fever is also essential.</p> <p><i>S. dysenteriae</i> type 1 is often more severe or fatal in young children, the elderly and the malnourished, and prompt treatment with antibiotics is essential. If in short supply, antibiotics should be reserved for such high-risk groups.</p>
Epidemic control	<p>Inform the health authorities when one or more suspected cases are identified. Early detection and notification of epidemic dysentery, especially among adults, enables timely mobilization of resources for appropriate Case management and control.</p> <p>Confirm the outbreak in accordance with WHO guidelines.</p> <p>Rectal swabs from suspected cases should be collected and shipped refrigerated to laboratories in an appropriate medium (e.g. Cary-Blair medium) for culture to confirm the diagnosis of Sd1. It is recommended that at least 10 cases be used to confirm the cause, identify antibiotic sensitivity and verify the outbreak. Once confirmed, it is not necessary to obtain laboratory confirmation for every patient.</p> <p>Testing of Sd1 isolates for antimicrobial sensitivity should be done at regular intervals to determine whether treatment guidelines remain appropriate. International referral laboratories are available to assist in identification of the organism and confirmation of the antimicrobial resistance pattern.</p> <p>Do not wait for laboratory results before starting treatment/control activities.</p>
Prevention	<p>See:</p> <ul style="list-style-type: none"> • <i>Diarrhoeal diseases (others)</i> and Appendix 4: <i>Safe water and sanitation</i> in this Profile. • <i>Guidelines for the control of epidemics due to Shigella dysenteriae type 1.</i> (Draft). http://www.who.int/child-adolescent-health/Emergencies/Shigellosis_guidelines.pdf • First steps for managing an outbreak of acute diarrhoea http://www.who.int/topics/cholera/publications/en/first_steps.pdf • Acute diarrhoeal diseases in complex emergencies: critical steps http://www.who.int/topics/cholera/publications/en/critical_steps_en.pdf

3. CHOLERA

DESCRIPTION

Infectious agent	Bacterium: <i>Vibrio cholerae</i> .
Case definition	<p>A cholera outbreak should be suspected if:</p> <p>A person aged older than 5 years develops severe dehydration or dies from acute watery diarrhoea (clinical case definition);</p> <p>or</p> <p>There is a sudden increase in the daily number of patients with acute watery diarrhoea, especially patients who pass the "rice water" stools typical of cholera.</p> <p>Confirmed case: Isolation of <i>Vibrio cholerae</i> O1 or O139 from stools in any patient with diarrhoea</p>
Mode of transmission	<p><u>Faecal–oral route</u></p> <p>1. Person-to-person transmission</p> <ul style="list-style-type: none"> – when taking care of cholera patients. – through direct contact with the bodies of deceased cholera patients (e.g. washing and preparing the body for funeral ceremonies). <p>2. Drinking contaminated water</p> <p>3. Eating food (fruits and vegetables) contaminated through</p> <ul style="list-style-type: none"> – water – soil – contamination <i>during</i> preparation (rice, millet, food from street vendors) – contaminated seafood. <p>4. Indirect contamination (hands)</p>
Incubation	Incubation period is usually a few hours to 5 days.
Period of communicability	During the symptomatic phase until 2–3 days after recovery; very rarely for months. Asymptomatic carriers are common.

EPIDEMIOLOGY

Burden	Although no official data is regularly available, cases of cholera are known to occur in the country.
Geographical distribution	There is no definite geographical distribution of the disease.
Seasonality	Cases reported in 2003 occurred in the rainy season, January to March.
Alert threshold	Any suspected case must be investigated.

Recent epidemics in the country	Number of cases reported in Indonesia		
	Year	Cases	Deaths
	1983	12964	-
	1984	7921	-
	1985	4732	
	1986	558	
	1987	-	-
	1988	50	-
	1989	67	-
	1990	155	-
	1991	620	55
	1992	25	0
	1993	3564	1
	1994	47	0
	1997*	66	0
(Data source: MOH/Indonesia, 2002 and *Weekly Epidemiological record - No. 27, 3 rd July 1998)).			
Other information:			
<ul style="list-style-type: none"> • 2003 - 23 cases reported in Central Sulawesi during the rainy season • 2003 - 305 cases reported in Gorontalo during the rainy season • 2001 - 118 cases reported in South Sumatra (month unknown) 			
(Data source: ASEAN Disease Surveillance, based on figures from health centres and hospitals. Please note, data may be incomplete).			
No cases of Cholera were reported from Aceh 2000 - 2002.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Spread of the infectious agent.
Overcrowding	Yes	Very important.
Poor access to health services	Yes	Early detection and containment of cases are paramount in reducing transmission.
Food shortages	Yes	Malnutrition increases the susceptibility of displaced populations to severe disease.
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	No	
Risk assessment conclusions		<p>Risk remains high while there is inadequate water and sanitation, population displacement and overcrowding. Without adequate access to appropriate health care, case fatality is very high.</p> <p>Cholera can result in severe dehydration within a few hours. The case fatality rate may surpass 50% in those presenting with severe dehydration if untreated. With good case management case fatality rate should be below 1%.</p>

REVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>The mainstay of case management for cholera is the treatment of dehydration using ORS or IV fluids (Ringer's lactate).</p> <p>Use of antibiotics (doxycycline/tetracycline) is not essential for disease treatment but may be used to reduce the volume of diarrhoea (and of the rehydration solutions required), shorten its duration and the period of vibrio excretion. Antimicrobial sensitivity patterns should be assessed in order to select the appropriate antibiotic.</p> <p>The case-fatality rate can be extremely high (from 5% up to 40%) without proper treatment. With appropriate case management, it is less than 1%.</p>
<p>Epidemic control</p>	<p>Inform the health authorities immediately if one or more suspected cases are identified.</p> <p>Confirm the outbreak in accordance with WHO guidelines. Stool samples must be taken with a rectal swab and transported in Cary-Blair medium. If a transport medium is not available, a cotton-tipped rectal swab can be soaked in the liquid stool, placed in a sterile plastic bag, tightly sealed and sent to the laboratory. It is recommended that at least 10 cases be used to confirm the cause, identify antibiotic sensitivity and verify the outbreak. Once confirmed, it is not necessary to obtain laboratory confirmation for every patient.</p> <p>Do not wait for laboratory results before starting treatment/control activities:</p> <ul style="list-style-type: none"> - Ensure prompt treatment and confirm the diagnosis. - Isolate cases in cholera treatment centres. - Provide adequate health education. - Ensure access to safe water and proper sanitation.
<p>Prevention</p>	<p>Health education programmes should be conducted on hygiene and disinfection measures with simple messages on safe water, safe food and hand-washing.</p> <p>Those who prepare bodies for burial must be meticulous about washing their hands with soap and water.</p> <p>Prompt diagnosis and appropriate treatment of patients must be carried out.</p> <p>See: "Prevention" in <i>Diarrhoeal diseases (others)</i> this Communicable Disease Profile.</p>
<p>Immunization</p>	<p>The use of oral cholera vaccine (OCV) is considered an additional public health tool to recommended cholera control measures such as provision of safe water and adequate sanitation.</p> <p>OCV is recommended for populations to limit the risk of :</p> <ul style="list-style-type: none"> - occurrence of cholera outbreaks in endemic areas. - spread and incidence of cholera during an outbreak. <p>Two oral vaccines are currently available: the killed cholera vaccine (WC/rBS; 2 doses) and the attenuated live vaccine (CVD103-HgR; single dose). Both vaccines have been licensed in some countries.</p> <p>Use of the single dose OCV is possible once an outbreak has started. The two dose OCV cannot be used once an outbreak has started (See: Joint WHO-UNICEF statement fro Cholera vaccine use in tsunami affected areas. http://www.who.int/cholera/tsunami_cholravaccine/en/index.html)</p> <p>For more specific information on cholera vaccines and their use, contact the Global Task Force on Cholera Control at WHO Geneva: chaignatc@who.int</p>

References	See: <ul style="list-style-type: none">• First steps for managing an outbreak of acute diarrhoea http://www.who.int/topics/cholera/publications/en/first_steps.pdf• Acute diarrhoeal diseases in complex emergencies: critical steps http://www.who.int/topics/cholera/publications/en/critical_steps_en.pdf• Diarrhoea treatment guidelines - Including new recommendations for the use of ORS and zinc supplementation. For Clinic-based healthcare workers. (WHO-UNICEF, 2005. <i>In print</i>).• WHO/Cholera website: http://www.who.int/topics/cholera/en/• Assessing the outbreak response and improving preparedness WHO/CDS/CPE/ZFK/2004.4 http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFk_2004.4.pdf
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4. DIARRHOEAL DISEASES (OTHERS)

DESCRIPTION

Infectious agent	<p>Bacteria: such as <i>Salmonellae</i> (commonly <i>S. enteritidis</i>, <i>S. typhimurium</i>) and <i>Escherichia coli</i>. The bacteria that cause the most severe outbreaks are <i>Shigella dysenteriae</i> type 1 and <i>Vibrio cholerae</i> (see <i>Bacillary dysentery</i> and <i>Cholera</i>).</p> <p>Protozoa: such as <i>Entamoeba histolytica</i>, <i>Giardia lamblia</i> and <i>Cryptosporidium parvum</i>.</p> <p>Viruses: such as rotavirus and Norwalk virus.</p>
Case definition	<p>Clinical case definition Three or more abnormally loose or fluid stools over a period of 24 hours.</p>
Mode of transmission	Faecal–oral route, particularly through contaminated water and food.
Incubation	<p><i>Salmonella</i> generally requires an 8–48 hour incubation period, whereas that for <i>E. coli</i> is typically longer at 2–8 days (median of 3–4 days); both usually last between 2–5 days.</p> <p>The average incubation period is 2–4 weeks for <i>E. histolytica</i>, 7–10 days for <i>G. lamblia</i> and 7 days for <i>C. parvum</i>.</p> <p>The incubation period for <i>rotavirus</i> is about 48 hours, and symptoms may last for up to 1 week.</p>
Period of communicability	During the acute stage of the disease and for the duration of faecal excretion. Temporary <i>Salmonella</i> carriers can continue to exist for several months.

EPIDEMIOLOGY

Burden	Diarrhoea cases reported from Aceh 2000 - 2002								
	2000			2001			2002		
	<5	≥5	Deaths	<5	≥5	Deaths	<5	≥5	Deaths
	20436	34007	0	18238	31955	3	13683	23347	0
	Data source: MOH/Indonesia, 2003.								
	Cases of diarrhoeal diseases reported from Sumatra 2001 - 2003								
	2003 - 214,930 cases reported in Sumatra, 39% in U5s, 34 deaths reported								
	2002 - 155,594 cases reported in Sumatra, 39% in U5s, 3 deaths reported								
	2001 - 212,341 cases reported in Sumatra, 33% in U5s, 10 deaths reported								
	NB: Presented as diarrhoeal diseases so may include cholera and shigellosis in numbers.								
	(Data source: ASEAN disease surveillance, based on figures from health centres and hospitals. Please note, data may be incomplete).								
Geographical distribution	Throughout the country.								
Seasonality	Diarrhoeal disease rates are higher in summer than in winter.								
Alert threshold	An increase in the number of cases above what is expected compared with previous years.								
Recent epidemics in the country	No data available.								

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Can import cases.
Overcrowding	Yes	Very important.
Poor access to health services	Yes	Early detection and containment of the cases are paramount in reducing transmission.
Food shortages	No	However, malnutrition increases gastrointestinal tract susceptibility to invasiveness of the organism and severity of disease.
Lack of safe water and poor sanitation	Yes	<p>The most important risk factor: prevention of diarrhoeal diseases depends on the provision and use of safe water, adequate sanitation and health education. The supply of adequate quantities of water should be one of the highest priorities for camp planners. The minimum emergency requirement is 20 litres/person per day.</p> <p>Common sources of infection in emergency situations are:</p> <ul style="list-style-type: none"> – Contaminated water sources (e.g. by faecally-contaminated surface water entering an incompletely sealed well) or during storage (e.g. by contact with hands soiled by faeces). – Shared water containers and cooking pots.
Others	Yes	Poor hygiene, lack of soap, contaminated food items.
Risk assessment conclusions		In camp situations, diarrhoeal diseases can account for 25–40% of deaths in the acute phase of an emergency. More than 80% of deaths usually occur in children aged under 2 years.

PREVENTION AND CONTROL MEASURES

Case management	<ul style="list-style-type: none"> • <u>Prevention</u> – using home made fluids and ORS – <u>and treatment of dehydration</u> – with ORS or IV fluids (Ringer’s lactate) for severely dehydrated patients – is the mainstay of case management of diarrhoeal illness, together with <u>continuing feeding</u> especially in children. – Reduction of mortality due to diarrhoeal diseases is primarily related to effective management of dehydration particularly in children. • Use of antibiotics is dependent on the infectious agent. • Resume feeding with a normal diet when vomiting has stopped. It is important to separate those who are eating from those who are not. Food should be cooked on site. Continue breastfeeding infants and young children.
Epidemic control	<ul style="list-style-type: none"> • Inform the health authorities immediately if an increase in the number of cases above what is expected is identified. • Confirm the diagnosis and ensure prompt treatment. • Confirm the outbreak in accordance with WHO guidelines.

<p>Prevention</p>	<p>Safe drinking-water.</p> <p>Provision of an adequate supply, collection and storage system.</p> <p>Provision of information on the importance of clean water, also covering system maintenance and household storage. (See Appendix 3: <i>Safe water and sanitation</i>).</p> <p>Safe disposal of human excreta.</p> <p>Provision of adequate facilities for the disposal of human waste.</p> <p>Provision of information on the importance of human waste disposal, also covering use and maintenance of facilities.</p> <p>Food safety</p> <p>Provision of adequate storage facilities for food (both uncooked and cooked), cooking utensils, adequate quantity of water and fuel to allow for cooking and reheating.</p> <p>Health education on the importance of food safety and safe food handling.</p> <p>Hand-washing with soap</p> <p>Provision of soap in sufficient quantities for hand-washing, bathing and laundry.</p> <p>Health education on the relationship between disease spread and lack of or poor hand-washing practices. Demonstration on the importance of thorough hand-washing.</p> <p>Breastfeeding</p> <p>Provision of information on the protective qualities of breastfeeding and the importance of breastfeeding ill children.</p> <p>Practical support for breastfeeding ill children.</p>
<p>References</p>	<p>See:</p> <ul style="list-style-type: none"> • First steps for managing an outbreak of acute diarrhoea http://www.who.int/topics/cholera/publications/en/first_steps.pdf • Assessing the outbreak response and improving preparedness WHO/CDS/CPE/ZFK/2004.4 http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFk_2004.4.pdf • Current priorities: cholera and typhoid fever in tsunami affected areas of South Asia http://www.who.int/hac/crises/international/asia_tsunami/communicable_diseases/cholera_typhoid/en/ • <i>Diarrhoea treatment guidelines</i> - including new recommendations for the use of ORS and zinc supplementation. For clinic based healthcare workers. WHO-UNICEF, 2004. <i>In publication</i>. • Acute diarrhoeal diseases in complex emergencies: critical steps http://www.who.int/topics/cholera/publications/en/critical_steps_en.pdf

5. DIPHTHERIA

DESCRIPTION

Infectious agent	Bacterium: <i>Corynebacterium diphtheriae</i> .
Case definition	<p>Clinical description</p> <p>Upper respiratory tract illness with laryngitis or pharyngitis or tonsillitis plus adherent membranes of tonsils or nasopharynx.</p> <p>Laboratory confirmation: isolation of <i>C. diphtheriae</i> from a clinical specimen.</p> <p>Case classification</p> <p>Suspected case: not applicable.</p> <p>Probable case: a case that meets the clinical description.</p> <p>Confirmed case: a probable case confirmed by laboratory or epidemiologically linked to a laboratory-confirmed case.</p> <p>Carrier: a case that does not meet the clinical case definition but <i>C. diphtheriae</i> identified from nasopharynx.</p> <p>Note: Persons with positive <i>C. diphtheriae</i> identification who do not meet the clinical description (e.g. asymptomatic carriers) should not be reported as probable or confirmed cases.</p>
Mode of transmission	<p>Contact (usually direct, rarely indirect) with the respiratory droplets of a case or carrier.</p> <p>In rare cases, the disease may be transmitted through foodstuffs (raw milk has served as a vehicle).</p>
Incubation	Usually 2–5 days; occasionally longer.
Period of communicability	Variable, until virulent bacilli have disappeared from discharges and lesions; usually 2 weeks or less and seldom more than 4 weeks. The rare chronic carrier can shed bacilli for 6 months or more. The disease is usually not contagious 48 hours after antibiotics are instituted.

EPIDEMIOLOGY

Burden	Number of cases reported nationally:			
	2003	275	1996	562
	2002	51	1995	597
	2001	34	1990	2200
	2000	23	1980	3674
	1999	114		
	1998	14		
	1997	4355		
	(Data source: WHO Vaccine Preventable Diseases 2004 Global Summary)			
Geographical distribution	Throughout the country.			
Seasonality	Seasonal incidence patterns are not constant over years.			
Alert threshold	Once suspected, a probable or confirmed case must be investigated.			
Recent epidemics	No data available.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Importation.																												
Overcrowding	Yes	Crowded conditions facilitate transmission.																												
Poor access to health services	Yes	No access to routine immunization services. Early detection and containment of cases are paramount to reduce transmission.																												
Food shortages	No																													
Lack of safe water and poor sanitation	No																													
Others	Yes	<p>Immunization coverage for DTP3 below WHO recommended target.</p> <p><u>National DTP3 national coverage (%)</u></p> <table border="0"> <tr> <td>2003</td> <td>70</td> <td>1996</td> <td>72</td> </tr> <tr> <td>2002</td> <td>70</td> <td>1995</td> <td>69</td> </tr> <tr> <td>2001</td> <td>76</td> <td>1990</td> <td>60</td> </tr> <tr> <td>2000</td> <td>75</td> <td>1980</td> <td>No data</td> </tr> <tr> <td>1999</td> <td>74</td> <td></td> <td></td> </tr> <tr> <td>1998</td> <td>74</td> <td></td> <td></td> </tr> <tr> <td>1997</td> <td>73</td> <td></td> <td></td> </tr> </table> <p>(Data source: WHO/UNICEF country estimates, 2004)</p>	2003	70	1996	72	2002	70	1995	69	2001	76	1990	60	2000	75	1980	No data	1999	74			1998	74			1997	73		
2003	70	1996	72																											
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1997	73																													
Risk assessment conclusions		Given that DTP3 coverage in Indonesia is below the recommended standard, outbreaks can be expected. Detection of outbreaks may be hampered due to poor access to health centres and poorly trained personnel. Additionally, outbreaks occur when social or natural conditions lead to overcrowding of susceptible groups, especially infants and children. This frequently occurs when there are large-scale movements of non-immunized populations.																												

PREVENTION AND CONTROL MEASURES

Introduction	<p>The control of diphtheria is based on three measures:</p> <ul style="list-style-type: none"> – Ensuring high population immunity through vaccination (primary prevention). – Rapid investigation and treatment of contacts (secondary prevention of spread). – Early diagnosis and proper case management (tertiary prevention of complications and deaths).
Immunization	<p>Immunize the population at risk as soon as possible. In an epidemic involving adults, immunize groups that are most affected and at highest risk. Repeat immunization procedures 1 month later to provide at least 2 doses to recipients.</p> <p>Diphtheria–toxoid-containing vaccine (preferably Td) should be given.</p> <p>To ensure injection safety during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>

<p>Case management</p>	<p>Diphtheria antitoxin and antibiotic therapy are the cornerstones of therapy for diphtheria.</p> <p>The antibodies neutralize toxin only before its entry into cells, and it is therefore critical that diphtheria antitoxin be administered as soon as a presumptive diagnosis has been made.</p> <ul style="list-style-type: none"> • Antibiotic therapy, by killing the organism, has three benefits: <ul style="list-style-type: none"> – Termination of toxin production – Amelioration of local infection – Prevention of spread of the organism to uninfected persons. <p>Do not wait for laboratory results before starting treatment/control activities.</p> <p><u>Patients</u></p> <p>Diphtheria antitoxin IM (20 000–100 000 units) in a single dose, immediately after throat swabs have been taken</p> <p>plus</p> <p>Procaine penicillin IM (25 000–50 000 units/kg per day for children; 1.2 million units/kg per day for adults in 2 divided doses), or parenteral erythromycin (40–50 mg/kg per day with a maximum of 2 g per day) until the patient can swallow</p> <p>then</p> <p>Oral phenoxymethylpenicillin (125–250 mg) in 4 doses per day, or oral erythromycin (40–50 mg/kg per day with a maximum of 2 g per day) in 4 divided doses.</p> <p>Antibiotic treatment should be continued for a total period of 14 days.</p> <p>Isolation: strict isolation for pharyngeal diphtheria, or contact isolation only for cutaneous diphtheria for a total of 14 days.</p> <p><u>Close contacts</u>¹</p> <p>Surveillance for 7 days for close contacts, regardless of vaccination status, and throat cultures.</p> <p>All close contacts must receive a single dose of benzathine benzylpenicillin G IM (600 000 units for children aged under 6 years; 1.2 million units for those aged 6 years or older). Erythromycin can be used also as second choice. If culture is positive, give antibiotics as for patients above.</p> <p><u>Carriers</u></p> <p>All carriers must receive a single dose of benzathine benzylpenicillin G IM (600 000 units for children aged under 6 years; 1.2 million units for those aged 6 years and older).</p> <p>Note: <i>Clinical diphtheria does not necessarily confer natural immunity, and patients should therefore be vaccinated before discharge from a health facility.</i></p>
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¹ Close contacts include household members and other persons with a history of direct contact with a case, as well as health care workers exposed to oral or respiratory secretions of a case.

Epidemic control	<p>Inform the health authorities when one or more suspected cases are identified.</p> <p>Confirm the suspected outbreak, following WHO guidelines. Investigate any probable case: check whether it fulfils the case definition, record date of onset, age and vaccination status.</p> <p>Investigate any probable case: check whether it fulfils the case definition, record date of onset, age and vaccination status.</p> <p>Confirm the diagnosis: collect both nasal and pharyngeal swabs for culture and swabs from any wounds or skin lesions. If appropriate facilities are available, determine the biotype and toxigenicity of <i>C. diphtheriae</i>.</p> <p>Identify close contacts and define population groups at high risk. Adult contacts must avoid contact with children and must not be allowed to undertake food handling until proven not to be carriers.</p> <p>Implement outbreak response measures. Give priority to case management and immunization of population in areas not yet affected where the outbreak is likely to spread.</p> <p>Immunize the population at risk as soon as possible, especially children. In an epidemic involving adults, immunize groups that are most affected and at highest risk. Repeat immunization procedures 1 month later to provide at least 2 doses to recipients.</p> <p>In endemic situations, Td vaccine (a combination of diphtheria and tetanus toxoids with reduced diphtheria content) should preferably be given.</p> <p>To ensure safety of injection during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>
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6. DENGUE FEVER AND DENGUE HAEMORRHAGIC FEVER

DESCRIPTION

Infectious agent	Flaviviruses, serotypes 1, 2, 3 and 4 (dengue -1, -2, -3, -4).
Case definition	<p>Clinical description</p> <p>Dengue fever is a flu-like illness that mainly affects older children and adults but seldom causes death. Dengue fever is marked by:</p> <ul style="list-style-type: none"> • sudden onset of high fever (>38.5°C) for 3-5 days, • severe headache • pain behind the eyes • muscles ache and joint pains • gastrointestinal disturbances • and at times a body rash <p>Dengue haemorrhagic fever (DHF) is a more severe form of the disease in which there is increased vascular permeability. In addition to the symptoms of dengue fever, bleeding phenomenon such as petechiae, epistaxis, gum bleeding, skin bruising, gastrointestinal haemorrhage resulting in vomiting blood and/or black stools occur.</p> <p>Dengue haemorrhagic fever – with bleeding and occasionally shock leading to death – occurs mainly in children.</p> <p>Laboratory criteria:</p> <p>Confirmation</p> <ul style="list-style-type: none"> – Serum samples are tested for virus-specific antibodies, generally using ELISA techniques. – Rapid tests based on dot-blot techniques are commercially available. – Ig M antibodies, indicating recent or current infection, are detectable by day 6 – 7 of the infection. – Differential diagnosis includes all epidemiologically relevant diseases listed under arthropod-borne viral fevers, yellow fever, measles, rubella, malaria, leptospirosis and other systemic febrile illnesses accompanied by rash.
Mode of transmission	By bite of infective mosquitoes, principally <i>Ae. aegypti</i> which is a day biting species with increased biting activity in the early morning and late afternoon.
Incubation	Incubation period is usually 3–14 days, commonly 4 – 7 days.
Period of communicability	Not transmitted from person to person. Patients are infective for mosquitoes from shortly before to the end of the febrile period (usually a period of 3 – 5 days). The mosquito becomes infective 8 - 12 days after the viremic blood meal and remains so for life.

EPIDEMIOLOGY

<p>Burden</p>	<p>Occurs in epidemics: See graphs below.</p> <p>(Source: GIDEON, 2005)</p> <p>DEN-3 has been observed to be the predominant circulating virus serotype; DEN- 4, DEN-2 and DEN-1 have also been confirmed in samples taken from patients during previous epidemics.</p>
<p>Geographical distribution</p>	<p>The disease is highly endemic throughout Indonesia.</p>
<p>Seasonality</p>	<p>January to June.</p>
<p>Alert threshold</p>	<p>One suspect case must lead to an alert.</p>

Most recent epidemics in the country	<p>Dengue fever is of current major concern in Indonesia and South East Asia. The maximum cases recorded during epidemics in previous years were over 40,000 in 1988, 1996, 1998, 2001, 2003 and 2004, reaching 72,133 in 1998 and 69,017 in 2004. Fatalities in the absence of the more severe dengue haemorrhagic fever are rare.</p> <p>February 2005: Annually observed seasonal cases are being reported to various national authorities in the region. By the end of January 2005, two cases and one death have been confirmed from Aceh province.</p> <p>March 2004: From January 1 to April 30 2004, a total of 58,301 cases of dengue fever and dengue haemorrhagic fever (DHF) and 658 deaths were reported by the Indonesian Ministry of Health. The case-fatality rate of 1.1% was lower in 2004 year than in previous years. From January 1 to March 3 2004, the Ministry of Health Indonesia reported 23 857 hospitalized cases including 367 deaths. Although all 30 provinces were affected, outbreaks with unusually high numbers of cases were reported from 293 cities in 17 provinces of the country. The majority of the cases were from provinces in Java, South Kalimantan, South East and West Nusa Tenggara and Aceh. DEN-3 was the most common circulating serotype. (37%) in Indonesia in this year, but DEN-4 (19%) DEN-2 and DEN-1 were also present. Local health authorities conducted intensive vector control activities including larviciding and spraying, and sensitized communities on how to destroy mosquito breeding sites.</p> <p>1998 pandemic: More than 1.2 million cases of dengue fever and DHF were reported to WHO from 56 countries. Indonesia reported an annual number of 72,133 cases and 1414 deaths with overall case fatality rate of 2.0%.</p>
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RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	With establishment of new human settlements and creation of temporary shelters where drinking water is obtained from outside sources or from rain water harvesting and storage in household containers.
Overcrowding	Yes	In emergency situations, close proximity of human habitation to water storage containers, and accumulation of rainwater
Poor access to health services	Yes	Health centre are essential as an alert network and for early diagnosis and treatment of suspected cases. Without proper treatment case fatality rates can exceed 20%.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The accumulation of rainwater in discarded vessels and debris may become <i>Aedes</i> breeding sites.
Others	Yes	Breakdown of vector control activities after an emergency increases risk of the disease.
Risk assessment conclusions	<p>Dengue is a major annual public health problem in Indonesia and causes cyclical epidemics in urban centres. The disease is a leading cause of hospitalization and death among children. Attack rates among susceptibles are often 40 - 50%, but may reach 80 - 90%.</p> <p>Accumulation of rainwater in containers and other items of debris is increases the number of vector breeding sites. Unless preventive measures are undertaken, the disease is likely to spread rapidly during this season. WHO recommended vector control measures should be instituted immediately and rigorously sustained over the dengue transmission season.</p>	

PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Specific therapy: There is no specific treatment currently available. However, careful clinical management frequently saves the lives of DHF patients. With appropriate intensive supportive therapy, mortality can be reduced to less than 1%. Maintenance of the circulating fluid volume is the central feature of DHF case management.</p> <p>Supportive treatment:</p> <ul style="list-style-type: none"> - For DHF, careful fluid replacement (lactated Ringers solution at 10 – 20 ml/kg/hour). Care must be taken to watch for and avoid over hydration. - Blood transfusions are indicated only when severe bleeding results in true falling haematocrit. - Antimicrobial drugs (to avoid secondary infections) - Antimalarials (if clinically indicated) <p>Aspirin and other salicylates are contraindicated because of its haemorrhagic potential.</p> <p>Observation of blood precautions until fever subsides:</p> <ul style="list-style-type: none"> - Prevent access of day biting mosquitoes to patients by screening the sickroom or using mosquito insecticide treated bed nets. <p>Spraying quarters with residual insecticide.</p>
<p>Epidemic control</p>	<p>Following major natural disasters, epidemics can be extensive and may affect a high percentage of the population.</p> <p>The main intervention efforts should be directed towards vector control where possible. Larval habitats of <i>Aedes</i> mosquitoes in urban and or peri-urban areas must be eliminated. Larvicide should be applied to other potential larval habitats.</p> <ul style="list-style-type: none"> - All stored water containers should be kept covered all the time. - Empty water from coolers, tanks, barrels, drums, and buckets. - There should be no water in coolers when not in use. - Remove water from refrigerator drip pans every other day.
<p>Prevention and control</p>	<p>The following key elements are essential in the prevention of explosive epidemics in areas potentially subject to dengue fever and DHF:</p> <ol style="list-style-type: none"> 1. Social mobilization and health education of the community, emphasizing: <ul style="list-style-type: none"> - elimination of breeding sites as much as possible. - Protection against daytime-biting mosquitoes, including the use of screening, protective clothing and repellents. 2. Elimination of larval habitats of <i>Aedes</i> mosquitoes in urban or peri-urban areas.
<p>Immunization</p>	<p>There is no recommended vaccine currently available for public health use.</p>
<p>Further reading</p>	<p>See:</p> <ul style="list-style-type: none"> - <i>Dengue in tsunami affected areas of Asia, January 2005</i>, http://www.who.int/water_sanitation_health/hygiene/emergencies/tsunami_dengue/en/ - <i>Prevention and control of Dengue and Dengue Haemorrhagic fever: comprehensive guidelines</i>. New Delhi. WHO regional office for South-East Asia. 1999 (WHO Regional Publications, South-East Asia series No. 29) - <i>Dengue Haemorrhagic fever: diagnosis, treatment, prevention and control</i>, 2nd Edition. Geneva. World Health Organization, 1997).

7. HIV/AIDS

DESCRIPTION

Infectious agent	Human immunodeficiency virus (HIV). Two types have been identified: HIV-1 and HIV-2; both have similar epidemiological characteristics. HIV-2 is less pathogenic than HIV-1.
Case definition	<p>AIDS case definition Acquired immunodeficiency syndrome (AIDS) is the late clinical stage of HIV infection, defined as an illness characterized by one or more indicator diseases.</p> <p>WHO staging system for HIV infection and disease in adults and adolescents</p> <p><u>Stage 1</u> 1. Asymptomatic. 2. Persistent generalized lymphadenopathy (PGL). Performance Scale 1: <i>asymptomatic, normal activity</i>.</p> <p><u>Stage 2</u> 3. Weight loss, <10% of body weight. 4. Minor mucocutaneous manifestations (seborrheic dermatitis, prurigo, fungal nail infections, recurrent oral ulcerations, angular cheilitis). 5. Herpes zoster within the past 5 years. 6. Recurrent upper respiratory tract infections (e.g. bacterial sinusitis), And/or Performance Scale 2: <i>symptomatic, normal activity</i>.</p> <p><u>Stage 3</u> 7. Weight loss, >10% of body weight. 8. Unexplained chronic diarrhoea, >1 month. 9. Unexplained prolonged fever (intermittent or constant), >1 month. 10. Oral candidiasis (thrush). 11. Oral hairy leukoplakia. 12. Pulmonary tuberculosis within the past year. 13. Severe bacterial infections (i.e. pneumonia, pyomyositis), And/or Performance Scale 3: <i>bedridden, <50% of the day during the past month</i>.</p> <p><u>Stage 4</u> 14. HIV wasting syndrome, as defined by the US Centers for Disease Control and Prevention (CDC).^a 15. <i>Pneumocystis carinii</i> pneumonia. 16. Toxoplasmosis of the brain. 17. Cryptosporidiosis with diarrhoea >1 month. 18. Cryptococcosis, extrapulmonary. 19. Cytomegalovirus (CMV) disease of an organ other than liver, spleen or lymph nodes. 20. Herpes simplex virus (HSV) infection, mucocutaneous >1 month, or visceral any duration. 21. Progressive multifocal leukoencephalopathy (PML). 22. Any disseminated endemic mycosis (e.g. histoplasmosis, coccidiomycosis). 23. Candidiasis of the oesophagus, trachea, bronchi or lungs. 24. Atypical mycobacteriosis, disseminated. 25. Non-typhoid <i>Salmonella</i> septicaemia. 26. Extrapulmonary tuberculosis. 27. Lymphoma. 28. Kaposi sarcoma. 29. HIV encephalopathy, as defined by CDC.^b</p> <p>Note: <i>Both definitive and presumptive diagnoses are acceptable.</i></p> <p>(a) HIV wasting syndrome: weight loss of >10% of body weight, plus either unexplained chronic diarrhoea (>1 mon h) or chronic weakness and unexplained prolonged fever (>1 month); (b) HIV encephalopathy: clinical finding of disabling cognitive and/or motor dysfunction interfering with activities of daily living, progressing over weeks to months, without a concurrent illness or condition other than HIV infection that could explain the findings.</p>

	<p>Expanded WHO case definition for AIDS surveillance*</p> <p>An adult or adolescent (aged >12 years) is considered to have AIDS if a test for HIV antibody gives a positive result, and one or more of the following conditions are present:</p> <ol style="list-style-type: none"> 1. >10% body weight loss or cachexia, with diarrhoea or fever, or both, intermittent or constant, for at least 1 month, not known to be due to a condition unrelated to HIV. 2. Cryptococcal meningitis. 3. Pulmonary or extrapulmonary tuberculosis. 4. Kaposi sarcoma. 5. Neurological impairment that is sufficient to prevent independent daily activities, not known to be due to a condition unrelated to HIV infection (e.g. trauma or cerebrovascular accident). 6. Candidiasis of the oesophagus (which may be presumptively diagnosed based on the presence of oral candidiasis accompanied by dysphagia). 7. Clinically diagnosed life-threatening or recurrent episodes of pneumonia, with or without etiological confirmation. 8. Invasive cervical cancer. <p>* WHO. <i>Weekly Epidemiological Record</i>, 1994, 69:273-275.</p>
	<p>Laboratory evidence of HIV</p> <p>This is most commonly based on detection of HIV antibody in serum samples using enzyme-linked immunosorbent assay (ELISA or EIA). When positive, this test must be confirmed with another test of higher specificity such as the Western blot, the indirect fluorescent antibody (IFA) test or a second ELISA test that is methodologically and/or antigenically independent.</p> <p>The rapid tests that are recommended by WHO have been evaluated at WHO collaborating centres and have levels of sensitivity and specificity comparable with WHO-recommended ELISA tests. The use of rapid HIV tests may afford several advantages in emergency and disaster settings, including:</p> <ul style="list-style-type: none"> – Rapid tests that do not require refrigeration will be more suitable for remote and rural areas and sites without a guaranteed electricity supply. Long shelf-life is also important, especially for remote areas and sites performing smaller numbers of tests. – Many rapid tests require no laboratory equipment and can be performed in settings where electrical and water supplies need not be guaranteed. – Rapid tests can detect HIV antibodies in whole blood (finger-prick samples) as well as in serum/plasma, and testing may therefore be performed by non-laboratory personnel with adequate training and supervision.

Mode of transmission	<p>Sexual intercourse (vaginal or anal) with an infected partner, especially in the presence of a concurrent ulcerative or non-ulcerative sexually transmitted infection (STI).</p> <p>Contaminated needles, syringes, other injecting equipment and injecting solutions (contamination often occurs when drug solutions are mixed or when multiple users draw up solutions from a single container).</p> <p>Transfusion of infected blood or blood products.</p> <p>Infected mother to her child during pregnancy, labour and delivery or through breastfeeding.</p>
Incubation	<p>Variable. On average, the time from HIV infection to clinical AIDS is 8–10 years, although AIDS may be manifested in less than 2 years or be delayed in onset beyond 10 years.</p> <p>Incubation times are shortened in resource-poor settings and in older patients. They can be prolonged by provision of primary prophylaxis for opportunistic infections or by antiretroviral treatment.</p>
Period of communicability	<p>Any person who is infected with HIV may pass the infection to another through the routes of transmission described above.</p> <p>Infectiousness is observed to be high during the initial period after infection. Studies suggest it increases further with increasing immune deficiency, clinical symptoms and presence of other STIs.</p>

EPIDEMIOLOGY

Burden	<p>Estimated number of adults and children living with HIV/AIDS in Indonesia, end of 2001: (including all people with HIV infection, whether or not they have developed symptoms of AIDS):</p> <table> <tr> <td>Adults (15 - 49)</td> <td>120,000</td> </tr> <tr> <td>Women (15 - 49)</td> <td>27,000</td> </tr> <tr> <td>Children</td> <td>1,300</td> </tr> </table> <p>Estimated number of deaths due to AIDS in 2001: 4,600</p> <p>Estimated number of living orphans in 2001: 18,000</p> <p>Main modes of transmission in 2001: 55% Heterosexual, 18% men who have sex with men, 14% intravenous drug use</p> <p>Prevalence rates among commercial sex workers in Sumatra (1995 - 2000) ranged from 0.0% to 0.3%.</p> <p>(Data Source, UNAIDS, 2002).</p>	Adults (15 - 49)	120,000	Women (15 - 49)	27,000	Children	1,300
Adults (15 - 49)	120,000						
Women (15 - 49)	27,000						
Children	1,300						
Geographical distribution	No data available; HIV median prevalence nationally among ANC attendees in 1998 was about 0.5% in urban areas and about 3.75% in rural areas.						
Seasonality	Not applicable.						
Alert threshold	Not applicable.						
Recent epidemics in the country	<p>Up to 1998 the prevalence was extremely low in Indonesia, even among commercial sex workers. However since that time the numbers of cases have risen sharply, partially due to the fact that intravenous drug users are now included in the figures, where prevalence rates as high as 35% have been found.</p> <p>Prevalence among some commercial sex workers has now increased to as much as 5% in some areas. UNAIDS states that the epidemic is now concentrated primarily around intravenous drug users.</p>						

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	<p>In emergency situations, population movement can:</p> <ul style="list-style-type: none"> – Cause breakdown in family and social ties. – Erode traditional values and coping strategies. This can result in higher-risk sexual behavior, which increases the risk of HIV spread. <p>Influence illicit drug trafficking and drug use, which increases the risk of HIV transmission through injecting drug use.</p>
Overcrowding	Yes	<p>Groups with differing levels of HIV awareness, and differing rates of infection, are often placed together in temporary locations, such as refugee camps, where there is greater potential for sexual contact.</p> <p>Overcrowding can also influence injecting drug use patterns and result in increased risk of sharing contaminated injecting equipment (this has been noted in refugee camps).</p>
Poor access to health services	Yes	<p>Without adequate medical services, STIs, if left untreated in either partner, greatly increase the risk of acquiring HIV.</p> <p>Important materials for HIV prevention, particularly condoms, are likely to be lacking in an emergency situation.</p> <p>In emergency situations, services for drug dependence treatment usually do not exist. It is more likely to be difficult to access sterile injecting equipment.</p>
Food shortages	Yes	<p>The need for food is paramount in emergency situations, and exchanging sex for money to buy food and other essentials can occur (see "Sex work", below).</p>
Lack of safe water and poor sanitation	No	

Others	Yes	<p>Sexual violence</p> <p>IDPs are often physically and socially powerless, with women and children at particular risk of sexual coercion, abuse or rape.</p> <p>Sexual violence carries a higher risk of infection because the person violated cannot protect herself or himself from unsafe sex, and because the virus can be transmitted more easily if bodily tissues are torn during violent sex.</p> <p>Sex work</p> <p>Exchange of sexual favours for basic needs such as money, shelter and security is common in or around refugee camps, and inevitably involves both the refugee and host communities. Both sex workers and clients are at risk of HIV infection if unprotected sex is practiced.</p> <p>Injecting drug use</p> <p>In Indonesia, no AIDS cases officially reported to UNAIDS had contracted the disease by injecting drugs.</p> <p>In typical emergency conditions, it is highly likely that drug injectors will be sharing needles, a practice that carries a very high risk of HIV transmission if one of the people sharing is infected.</p> <p>Unsafe blood transfusions</p> <p>Transfusion with HIV-infected blood is a highly efficient means of transmitting the virus. In emergency situations, when regular transfusion services have broken down, it is particularly difficult to ensure blood safety.</p> <p>Adolescent health</p> <p>Children in IDP settings may have little to occupy themselves with, which may lead them to experiment with sex earlier than children in other situations.</p> <p>Lack of regular supplies</p> <p>Lack of laboratory reagents for screening and testing, particularly for blood transfusions.</p> <p>Lack of condoms.</p>
Risk assessment conclusions		<p>HIV/AIDS is becoming an increasing problem in Indonesia but it is partially concentrated among injecting drug users around Jakarta.</p> <p>HIV rates among blood donors have increased in the last years and also among commercial sex workers, although because most of these activities are not brothel based it is fueling the increase in numbers as much as injectable drug users.</p> <p>All stakeholders involved in humanitarian activities must be sensitized to the importance of addressing HIV in tandem with all other activities. Activities should include HIV prevention (promotion of safer sexual behaviours, treatment of STIs, blood safety) and care and support for people living with HIV/AIDS (PLWHA). They must reach vulnerable populations and address the needs of women and children.</p> <p>All stakeholders must also be sensitized about HIV risks associated with injecting drug users and the need for drug dependence treatment and risk reduction education and counseling.</p>

PREVENTION AND CONTROL MEASURES

Case management	<p>Provide high-quality care and support to all PLWHA, which includes counseling, psychosocial support, treatment for opportunistic infections (e.g. TB), palliative care and access to antiretroviral therapy where feasible.</p> <p>Support PLWHA to live normal and productive lives that are free of stigmatization and discrimination.</p>
Prevention	<p>Reduce sexual and mother-to-child transmission</p> <p><i>Awareness and life skills education</i>, especially among youth, to ensure that all people are well informed of what does, and does not, constitute a mode of transmission; of how and where to acquire free condoms and medical attention if necessary; and information on basic personal hygiene.</p> <p><i>Condom promotion</i> to ensure that good-quality condoms are freely available to those who need them, using culturally sensitive instructions and distribution mechanisms.</p> <p><i>STI control</i>, including for sex workers, using the syndromic STI management approach, with partner notification and promotion of safer sex.</p> <p><i>Reduce mother-to-child transmission of HIV</i> by:</p> <ul style="list-style-type: none"> – the primary prevention of HIV among women, especially young women – avoiding unintended pregnancies among HIV-infected women and promoting family planning methods, particularly in women who are infected with HIV – preventing HIV transmission from infected pregnant women to their infants by: <ul style="list-style-type: none"> – using an antiretroviral prophylaxis regimen; – avoiding unnecessary and invasive obstetrical procedures such as artificial rupture of membranes or episiotomy; and – modifying infant feeding practices (replacement feeding given with a cup when acceptable, feasible, affordable, sustainable and safe; otherwise exclusive breastfeeding for the first six months of life is recommended. See <i>The optimal duration of exclusive breastfeeding - A systematic review</i>, WHO/FCH/CAH/01.23). <p>Blood safety</p> <p>HIV testing of all transfused blood. Avoid non-essential blood transfusion</p> <ul style="list-style-type: none"> – Recruitment of safe blood donor pool. <p>Prevention among injecting drug users</p> <p>Ready access to sterile needles, syringes and other injecting equipment (and disposal of used equipment).</p> <p>HIV risk reduction education and counseling for injecting drug users (including peer outreach when possible).</p> <p>Drug dependence treatment services, including substitution treatment (e.g. methadone) where possible.</p> <p>Access to STI and HIV/AIDS treatment for injecting drug users.</p>

	<p>Universal precautions</p> <p>Washing hands thoroughly with soap and water, especially after contact with body fluids or wounds.</p> <p>Using protective gloves and clothing when there is risk of contact with blood or other potentially infected body fluids.</p> <p>Safe handling and disposal of waste material, needles and other sharp instruments. Proper cleaning and disinfection of medical instruments between patients.</p> <p>Physical protection</p> <p>The protection of the most vulnerable, especially women and children, from violence and abuse is not only an important principle of human rights but is also essential for reducing the risk of HIV infection.</p>
<p>Protecting health care workers</p>	<p>In order to reduce nosocomial transmission, health workers must strictly adhere to universal precautions with all patients and laboratory samples – whether or not known to be infected with HIV.</p> <p>Health care workers should have access to voluntary counseling, testing and care; those deployed in complex emergencies frequently experience significant occupational stress, and those tested as part of the management of occupational exposures will require additional support.</p>
<p>Counseling and voluntary testing programmes</p>	<p>The establishment of voluntary counseling and testing services to help individuals make informed decisions about HIV testing should be considered when relative stability has been restored. Displaced populations are often coerced into testing or are required to make decisions about testing when they are suffering acute or post-traumatic stress disorders.</p> <p>As displaced populations are often tested before resettlement in other countries, it is critical that they receive counseling on the legal and social implications of the test. Often, migration or temporary residency status is contingent on the applicant's having HIV antibody seronegative status.</p> <p>Post-test counseling is essential for both seronegative and seropositive results. Displaced populations and conflict survivors who are already traumatized will require additional psychosocial support if they test seropositive. Typically, the support networks of displaced persons are disrupted, and suicide risk assessment forms an important part of post-test counseling in a refugee or conflict context.</p> <p>Testing of orphaned minors should be done with the consent of their official guardians only where there is an immediate health concern or benefit to the child.</p>
<p>Immunization</p>	<p>Asymptomatic HIV-infected children should be immunized with the EPI vaccines.</p> <p>Symptomatic HIV-infected children should NOT receive BCG or yellow fever vaccine.</p>

8. LEPTOSPIROSIS

DESCRIPTION

Infectious agent	Pathogenic leptospire bacteria of the order Spirochaetales belonging to the species <i>Leptospira interrogans</i> .
Case definition	<p>Clinical description</p> <p>The usual presentation is as an acute illness with headache, myalgia and prostration associated with any of the following symptoms:</p> <ul style="list-style-type: none"> • Conjunctival suffusion • Meningeal irritation • Anuria or oliguria and/or proteinuria • Jaundice • Haemorrhages (from intestines and/or lungs) • Cardiac arrhythmia or failure • Skin rash <p>and a history of exposure to infected animals or an environment contaminated with animal urine. Other common symptoms include nausea, vomiting, abdominal pain, diarrhoea and arthralgia.</p> <p>Generally, there are two phases in the illness: the leptospiremic or febrile stage, followed by the convalescent or immune phase.</p> <p>Clinical diagnosis is often difficult. Cases are often misdiagnosed as meningitis, encephalitis or influenza.</p> <p>Recovery of untreated cases can take several months. Case fatality rate is low but increases with advancing age and may reach 20% or more in patients with jaundice or kidney damage who have not been treated with renal dialysis: deaths are predominantly due to hepatorenal failure, vascular abnormalities with haemorrhage, adult respiratory distress syndrome or cardiac arrhythmias due to myocarditis.</p> <p>Laboratory diagnosis</p> <p>Diagnosis is confirmed by:</p> <ul style="list-style-type: none"> • Isolation (and typing) from clinical materials through culture of pathogenic leptospire. Recommended samples for isolation: <ul style="list-style-type: none"> – Isolation of leptospire from blood within the first 7 days of disease. – Isolation of leptospire from CSF between days 4 and 10. – Isolation of leptospire from urine after day 10. • Positive serology, preferably Microscopic Agglutination Test (MAT), using a range of <i>Leptospira</i> strains for antigen that should be representatives of local strains. Positive serology means, seroconversion or a 4-fold titre rise or higher in paired samples. For a single sample a sufficiently high cut-off value should be handled (for MAT a cut-off titre of 1:800 is recommended). <p>Case classification</p> <p>Suspected: A case that is compatible with clinical description.</p> <p>Confirmed: A suspect case that is confirmed in a competent laboratory.</p> <p>Leptospirosis is often confused with other diseases or not considered at all. In all cases of fever with unknown origin, leptospirosis must be included in the differential diagnosis.</p>

Mode of transmission	Through: <ul style="list-style-type: none"> - Contact of wounded skin or mucus membranes with water, moist soil or vegetation contaminated with urine of infected animals as when swimming, accidental immersion or occupational abrasion. - Direct contact with urine or tissues of infected animals. - Occasionally by inhalation of droplet aerosols of contaminated fluids.
Incubation	Usually 10 days, with a range of 2 – 30 days.
Period of communicability	Direct transmission from person to person is rare. Leptospire have been observed in human and animal urine for as long as 11 months after the acute illness.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	Worldwide. In urban and rural areas. Reservoirs include both wild and domestic animals, notable amongst which are rats, swine, cattle, dogs and raccoons.
Seasonality	Rainy and harvest season.
Alert threshold	All suspected cases must be investigated. Immediate case-based reporting of suspected or confirmed cases from peripheral levels should be instituted.
Most recent epidemics in the country	No reliable quantitative data available. Presumptive large-scale outbreaks in Indonesia: January – March 2002 and January – March 2004 (during dengue outbreak).

RISK FACTORS FOR INCREASED BURDEN

Population movement	No	Movements of animals, either or not combined with population movement.
Overcrowding	Yes	Camp settings.
Poor access to health services	Yes	This causes delays in diagnosis leading to higher case fatality rates.
Food shortages	Yes	Poor physical condition of patient associated with severity of disease and death.
Lack of safe water and poor sanitation	Yes	Conditions leading to an increase of contaminated water or soil, such as rain, floods and disasters increase the risk of leptospirosis.
Others	No	

<p>Risk assessment conclusions.</p>	<p>Floods and disasters increase the risk of leptospirosis and may lead to epidemics. Susceptibility of humans is general.</p> <p>Outbreaks occur among those exposed to mud and fresh river, stream, canal and lake water contaminated by urine of domestic and wild animals and to urine and tissues of infected animals. The disease is an occupational hazard for rice and sugarcane field workers, farmers, sanitation workers, abattoir workers, fish workers and military troops.</p> <p>During periods of drought both humans and animal reservoirs may be attracted to a common water source hence increasing the risk of infection.</p>
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PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Early treatment with antibiotics.</p> <p>Severe cases are usually treated with high doses of intravenous benzylpenicillin (30mg/kg up to 1.2g IV 6-hourly for 5- 7 days), amoxicillin, ampicillin or erythromycin.</p> <p>Less severe cases are treated orally with antibiotics such as doxycycline (2mg/kg to 100mg orally 12-hourly for 5-7 days), tetracycline, ampicillin or amoxicillin.</p> <p>Third generation cephalosporins, such as ceftriaxone and cefotaxime, and quinolone antibiotics may also be effective.</p> <p>Soiled articles should be disinfected. Protective precautions should be observed when handling body fluids.</p>
<p>Epidemic control</p>	<p>When an outbreak is suspected or identified:</p> <ul style="list-style-type: none"> - The source of infection must be identified. - Eliminate the source of infection and prohibit use of contaminated water source. - Investigate industrial and occupational sources, including direct animal contact. - Include veterinary experts and departments in the control management team.
<p>Prevention and control</p>	<ul style="list-style-type: none"> • Sensitize public health and veterinary workers on disaster implications following flooding. • Educate the public on modes of transmission, to avoid swimming or wading in potentially contaminated waters – or to use protection when work requires such exposure. • Protect workers in hazardous occupations by providing boots, gloves and aprons. • Recognize potentially contaminated waters and soil and drain such waters where possible or place warning signs. • Control rodents in human habitations. • Cleaning of premises of human habitations and occupation that attract rodents • Segregate infected domestic animals. • Where possible, immunize farm and pet animals to prevent illness. However, this does not necessarily prevent infection and renal shedding of leptospores.
<p>Immunization</p>	<p>Selective vaccination for those exposed through occupational risk. The vaccines must contain the dominant local strains. Immunity to a specific serovar may not protect against infection with a different serovar.</p> <p>There is no suitable vaccine for Indonesia.</p>

9. MALARIA

DESCRIPTION

Infectious agent	<p>In Indonesia, malaria cases are caused by the protozoan parasites <i>Plasmodium falciparum</i> and <i>Plasmodium vivax</i>.</p> <p><i>P. falciparum</i> causes the most life-threatening form of the disease.</p>
Case definition	<p>Clinical case definition:</p> <p>Suspected malaria</p> <p>A person with fever or history of fever >38°C within the last 48 hours with one or more of the following symptoms: nausea, vomiting and diarrhoea, headache, joint pains, chills and myalgia.</p> <p>Severe malaria</p> <p>A patient with symptoms as for uncomplicated malaria, plus drowsiness with extreme weakness and associated signs and symptoms related to organ failure (e.g. disorientation, loss of consciousness, convulsions, severe anaemia, jaundice, haemoglobinuria, spontaneous bleeding, pulmonary oedema and shock).</p> <p>Confirmed case</p> <p>Demonstration of malaria parasites in blood film by examining thick or thin smears, or by rapid diagnostic test for <i>P. falciparum</i>.</p>
Mode of transmission	<p>Vector-borne, through infective <i>Anopheles</i> mosquito bite.</p> <p>In Aceh and North Sumatra, the main malaria vectors are <i>An.sundaicus</i> and <i>An.aconitus</i>.</p> <p>Malaria may also be transmitted through blood transfusion of infected blood. Rarely, infants may contract malaria <i>in utero</i> through transplacental transfer of parasites, or during delivery.</p>
Incubation	<p>The incubation period for mosquito-transmitted infection is approximately 7–14 days for <i>P. falciparum</i> and 8–14 days for <i>P. vivax</i>.</p> <p>However, malaria should be considered in all cases of unexplained fever that starts at any time between 1 week after the first possible exposure to malaria risk and 2 months (or even longer in rare cases) after the last possible exposure.</p>
Period of communicability	<p>Communicability is related to the presence of infective <i>Anopheles</i> mosquitoes and of infective gametocytes in the blood of patients. Untreated or insufficiently treated patients may be a source of mosquito infection for more 1–2 years in <i>P. vivax</i> malaria and usually no longer than 1 year in <i>P. falciparum</i> malaria.</p>

EPIDEMIOLOGY

Burden	<p>Reported malaria cases in Banda Aceh Province (source: WHO/Jakarta) 2003: 20 440 suspected malaria cases, 1843 confirmed cases 2004 (Jan-Sep): 8 990 suspected malaria cases, 993 confirmed cases The distribution between falciparum and vivax malaria is about equal. In Indonesia, half the population is estimated to live in areas with malaria risk.</p>
Geographical distribution	<p>In Indonesia, malaria risk exists throughout the year in the whole country except in Jakarta Municipality, big cities, and within the areas of the tourist resorts of Bali and Java.</p> <p>In Aceh and North Sumatra, malaria of varying endemicity occurs in coastal areas, transmitted by <i>Anopheles sundaicus</i>, which breeds in brackish water with generally less than 50% the salinity of seawater (although occasionally <i>An.sundaicus</i> mosquito larvae in water bodies with high/low extremes of salinity have been reported). Malaria also occurs in interior parts of the island, mainly transmitted by <i>An.aconitus</i>, which typically breeds in rice-fields. Distribution of cases in the past has been patchy and linked to presence of local mosquito vectors and the presence/absence of suitable breeding sites.</p>
Seasonality	<p>No data available but rainy season is hot and humid and runs from October to March.</p>
Alert threshold	<p><i>Any significant increase in the number of cases above what is expected for the time of the year in a defined area.</i></p> <p>Vivax / suspected malaria epidemic alert : in a steady population, 1.5 times the mean of cases calculated over the last three weeks can be considered as an alert (<i>this figure to be adjusted as experience builds up in the tsunami-affected areas</i>) Suspected falciparum epidemic alert: Clustering of malaria referrals/inpatients and deaths, especially among resident older children and adults, or among displaced people of all ages.</p> <p>It is important to track weekly case numbers. Cases should be recorded separately as suspected (= not laboratory-tested) or confirmed. Reliable diagnosis by microscopy or rapid diagnostic test (RDT) should be obtained in the greatest possible number of cases, also to track the trend of the slide/RDT-positivity rate.</p> <p>Alert response: Immediate investigation (within 24-48 hours) to determine the cause, effect and the potential magnitude of the epidemic. Control measures, notably improved access to free diagnosis and treatment with ACT, must be implemented immediately (within one week) if a falciparum malaria epidemic is confirmed.</p> <p><i>NB: a vivax epidemic may precede a falciparum epidemic.</i></p>
Recent epidemics	<p>Epidemics in coastal areas transmitted by <i>Anopheles sundaicus</i> have been rare and localized. In 1997, a localized <i>An.sundaicus</i>-transmitted malaria epidemic occurred in a tourist resort on Bintan Island in Indonesia (1 dead, 17 visitors affected).</p> <p>In Indonesia, malaria re-emerged in 1997 in several parts of the country that had previously been free of the disease, due to a reduction in funding of vector control and health surveillance activities. In 1998, malaria outbreaks were reported in the highlands of Irian Jaya. In 2000, a malaria epidemic occurred in Menoreh Hills, Central Java, resulting in a peak of 44.5 reported cases /1000 population per year in one district.</p>

RISK FACTORS FOR INCREASED DISEASE BURDEN

Population movement	Yes	<p>The potential for epidemics can increase with the influx of non-immune populations moving from areas of no malaria/low transmission to highly endemic areas. Similarly, an influx of parasite carriers may trigger an epidemic in an epidemic-prone hypoendemic area.</p>
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Overcrowding	Yes	A consequence of increased population density and increased exposure to mosquito bites in temporary shelters.
Poor access to health services	Yes	<ul style="list-style-type: none"> • Delays in access to effective treatment increase the likelihood of severe disease and death. • Delays in access to effective treatment also increase the pool of malaria gametocyte carriers (the mature sexual stage of the parasite in humans that, once picked up in the blood-meal of a mosquito, develops into the infective stage for transmission to another human).
Food shortages	Yes	Malnutrition increases vulnerability to severe malaria once infection has occurred. Case management also becomes more complicated, resulting in increased mortality.
Lack of safe water and poor sanitation	No	However, temporary surface-water bodies may increase breeding opportunities for the malaria vector.
Others	Yes	<ul style="list-style-type: none"> • The invasion of inland areas by sea waters and later diluted by rain and fresh water will likely add to the breeding of <i>An.sundaicus</i>. Sea water flooding makes most stagnant water-bodies unsuitable for vector breeding. However, the onset of seasonal rainfall de-salinates the sea water making breeding sites increasingly more suitable for vector breeding. With about 600,000 displaced people, there is concern that local malaria epidemics could occur near <i>An.sundaicus</i> breeding sites. Too much rainwater may again reduce <i>An.sundaicus</i> breeding. Entomological expertise is required to target vector control operations at active breeding sites near human habitation. • Breakdown of control measures, and lack of preventive interventions (e.g., use of insecticide-treated mosquito nets, indoor residual spraying of shelters with residual insecticide).
Risk assessment conclusions		<p>Epidemiological situation in tsunami-affected areas Sumatra is endemic for malaria (roughly 50% falciparum, 50% vivax). Past distribution of malaria cases in Aceh and North Sumatra has been patchy and linked to presence of local mosquito vectors and the nearby presence/absence of suitable breeding sites. Thus, people with varying levels of pre-existing malaria immunity have been displaced by recent events. Lack of shelter increases the exposure to night-time mosquito biting, and malnutrition, physical stress and concurrent infections make people more vulnerable to severe disease once infected. The main vector in coastal areas is <i>Anopheles sundaicus</i>, which generally breeds in brackish water with less than 50% the salinity of seawater. The invasion of inland areas by sea waters and later diluted by rain and fresh water will likely add to the breeding of <i>An.sundaicus</i>. With about 600,000 displaced people, there is concern that local malaria epidemics could occur near <i>An.sundaicus</i> breeding sites.</p> <p>Country-wide Issues and Challenges : A strategic plan has been developed, together with increased funding recently approved through Global Fund for AIDS, TB, and Malaria, but implementation is yet to begin. Decentralization now underway mandates responsibility for implementation at district and provincial levels. The malaria unit of the MoH continues to need strengthening of its function as coordinator of both RBM and GFATM. Drug treatment policy needs continuing monitoring with regard to emerging resistance patterns. (Source WHO & SEARO).</p>

PREVENTION AND CONTROL MEASURES

Case management	<p><i>P.falciparum</i> resistant to chloroquine and sulfadoxine–pyrimethamine reported. <i>P.vivax</i> resistant to chloroquine reported on Nias Island.</p> <p>The government has recommended the use artesunate and amodiaquine as first line treatment for falciparum malaria. The drugs currently recommended by WHO for the treatment of malaria in Indonesia in tsunami affected areas are as summarized below:</p>		
	Diagnosis	Situation	Treatment
	Suspected malaria	Where laboratory diagnosis (microscopy or rapid diagnostic testing) is not possible	Amodiaquine plus artesunate (ACT)
	Suspected malaria in pregnancy	in situations where laboratory diagnosis (microscopy or RDT) is not possible	Quinine
	Confirmed falciparum malaria or mixed <i>P. falciparum</i> / <i>P. vivax</i> infection		Quinine
	Confirmed falciparum malaria or mixed <i>P. falciparum</i> / <i>P. vivax</i> infection in pregnancy	During the 2 nd and 3 rd trimesters of pregnancy	Amodiaquine plus artesunate (ACT)
		For the 1 st trimester of pregnancy	Quinine.
	Confirmed <i>P.vivax</i> malaria		Chloroquine (3 days), plus primaquine (14 days) where compliance can be assured and drug not contra-indicated
	Confirmed <i>P.vivax</i> malaria in pregnancy	NB: Primaquine is contra-indicated during pregnancy, but can be given after delivery	Chloroquine (3 days) During pregnancy, vivax relapses from persistent liver forms can be treated with chloroquine
	Treatment failure for <i>P. falciparum</i> or <i>P.vivax</i>	Requires laboratory confirmation	Quinine
Severe malaria	During 1 st trimester of pregnancy	Quinine	
	All other patients, and during 2 nd and 3 rd trimester of pregnancy	Quinine or artemether	
<p>For detailed drug regimens and schedules, refer to the guidelines on <i>Malaria control/treatment in emergencies</i> prepared by the Malaria control subdirector, CDC-EH, Ministry of Health Indonesia (January 2005).</p>			

<p>Prevention and Control</p>	<p>Malaria prevention measures in Indonesia include distribution of insecticide treated mosquito nets (ITN), environmental management, and indoor residual spraying with pyrethroids.</p> <p>Chemoprophylaxis: WHO recommends mefloquine, doxycycline or atovaquone/proguanil prophylaxis for international travellers to tsunami-affected areas in Indonesia. Chemoprophylaxis must be complemented by personal protective measures (protective clothing, mosquito repellents, ITN) between dusk and dawn. Chemoprophylaxis can not be recommended on a population wide basis because it is extremely difficult to implement and to assure compliance. Additionally, non-compliance to prophylaxis guidelines can accelerate the development of drug resistance.</p> <p>Prevention of malaria during pregnancy is by use of personal protection methods (mainly ITNs) plus prompt access to diagnosis and treatment in case of fever. Intermittent preventive treatment is presently not indicated, and not recommended by MOH Indonesia.</p> <p>Vigorous health education at community level to encourage use of ITNs and improve rapid treatment-seeking behaviour for fever cases during the transmission season.</p> <p>Vector control guiding principles: decisions have to be based on local epidemiological situation and resources. For rapid control, the emphasis is on chemicals. Use trained personnel, plus monitoring and evaluation. Insecticides and equipment should be conform approved specifications, and already registered for use in-country. The main tools are insecticide treated mosquito nets (preferably long-lasting), indoor residual spraying with insecticides, and larviciding.</p> <p>For further information see:</p> <p>1. Technical note: <i>Malaria risk and Malaria control in Asian countries affected by the tsunami disaster</i> http://mosquito.who.int/docs/TsunamiTN25January2005.pdf</p> <p>2. Malaria vector control: Insecticides for Indoor residual spraying: http://whqlibdoc.who.int/hq/2001/WHO_CDS_WHOPES_2001.3.pdf</p>
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10. MEASLES

DESCRIPTION

Infectious agent	Measles virus (genus <i>Morbillivirus</i> , family Paramyxoviridae)
Case definition	<p>Clinical case definition:</p> <p>Any person with:</p> <ul style="list-style-type: none"> – Fever and maculopapular (i.e. non-vesicular) rash, and cough or coryza (i.e. runny nose) or conjunctivitis (i.e. red eyes); <p>or</p> <p>Any person in whom a clinical health worker suspects measles infection.</p> <p>Laboratory criteria:</p> <p>Detection of measles-specific IgM antibodies.</p> <p>Suspected case Any person meeting the above clinical case definition.</p> <p>Confirmed case A case that is laboratory-confirmed (a laboratory confirmed case does not need to meet the clinical case definition)</p> <p>or</p> <p>A case that meets the clinical case definition and is epidemiologically linked by direct contact to a laboratory-confirmed case in which rash onset occurred 7–18 days earlier.</p>
Mode of transmission	Airborne by droplet spread; or Direct contact with the nasal and throat secretions of infected persons or via objects (e.g. toys) that have been in close contact with an infected person.
Incubation	After infection there is an asymptomatic incubation period of 10–12 days, with a range from 7 to 18 days from exposure to the onset of fever.
Period of communicability	Measles is most infectious from 4 days before the rash until 1–2 days after rash onset.

EPIDEMIOLOGY

Burden	Number of cases reported nationally:			
	2003	16818	1996	35383
	2002	14492	1995	37693
	2001	3825	1990	92105
	2000	3344		
	1999	4767		
	1998	1034		
	1997	14313		
	(Data source: WHO VPD Monitoring System 2004 Global Summary)			
Geographical distribution	Measles is highly endemic throughout Indonesia, and the expected number of measles cases is high due to low vaccination coverage.			
Seasonality	No detailed information available.			

Alert threshold	<p>In an open community setting, a single suspected measles case is sufficient to prompt an immediate immunization response. Life-saving measles vaccine, along with vitamin A, should be made available immediately targeting previously unvaccinated infants and children 6 to 59 months of age. Infants and children whose vaccination status is uncertain should also receive measles vaccine.</p> <p>In crowded settings, pre-emptive measles immunization, along with vitamin A, is a priority health intervention during and after emergencies. In these settings, all children 6 months to 14 years of age should receive measles vaccine regardless of previous vaccination history. At a minimum, children 6 months to 4 years of age should be immunized.</p>
Recent epidemics	<p>Although surveillance is incomplete, several outbreaks are reported each year from Indonesia. The last major outbreak reported to WHO occurred on the remote island of Alor in the district of Nusa Tenggara Timor (NTT). The outbreak peaked in November/December 2004. The number of reported cases and deaths was 218 and 29, respectively (case-fatality rate 13.3%). The outbreak was laboratory confirmed, and the majority of cases occurred in previously unvaccinated children less than 5 years of age.</p>

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Importation of virus. Case-fatality rates are estimated at 3-5% in developing countries, but may be as high as 10-30% in displaced populations.																																
Overcrowding	Yes	Crowded conditions, such as IDP camps, facilitate transmission.																																
Poor access to health services	Yes	Case-fatality rates can be reduced by effective case management, including the administration of vitamin A supplements.																																
Food shortages	No	However, disease is more severe among children with malnutrition and vitamin A deficiency.																																
Lack of safe water and poor sanitation	No																																	
Others	Yes	<p>Low immunization coverage among internally displaced populations and/or in the host area.</p> <p>MCV (measles-containing vaccine) coverage:</p> <table border="1"> <thead> <tr> <th>Year</th> <th>% Coverage</th> <th>Year</th> <th>% Coverage</th> </tr> </thead> <tbody> <tr> <td>2003</td> <td>72</td> <td>1996</td> <td>79</td> </tr> <tr> <td>2002</td> <td>72</td> <td>1995</td> <td>63</td> </tr> <tr> <td>2001</td> <td>70</td> <td>1990</td> <td>58</td> </tr> <tr> <td>2000</td> <td>72</td> <td>1980</td> <td>no data available</td> </tr> <tr> <td>1999</td> <td>74</td> <td></td> <td></td> </tr> <tr> <td>1998</td> <td>75</td> <td></td> <td></td> </tr> <tr> <td>1997</td> <td>77</td> <td></td> <td></td> </tr> </tbody> </table> <p>(Data source: WHO/UNICEF estimates of immunization coverage, 2004)</p>	Year	% Coverage	Year	% Coverage	2003	72	1996	79	2002	72	1995	63	2001	70	1990	58	2000	72	1980	no data available	1999	74			1998	75			1997	77		
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Risk assessment conclusions	<p>Measles vaccination coverage in Aceh province was reported to WHO as being significantly less than the national average of 72%. Estimates are in the range of 40-50%. In the emergency phase, primary focus is to initially target displaced children 6 months through 14 years of age living in of Aceh and 3 affected districts of North Sumatra with a target population of approximately 575,000.</p> <p>OPV and vitamin A are also being administered. Plans are being made to extend this campaign to all children 6 months through 14 years of age in these areas. An additional 700,000 children will be targeted in this campaign which is expected to be completed by early March 2005.</p>
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PREVENTION AND CONTROL MEASURES

Introduction	<p>Indonesia has a routine immunization policy that requires a dose of single-antigen measles vaccine at 9 months of age (see Appendix 10: <i>Immunization schedule for Indonesia</i>).</p> <p>However, supplementary measles immunization activities are required in order to reduce the risk of a measles outbreak.</p>
Routine Immunization	<p>Immunize the population at risk as soon as possible. The priority is to immunize children aged 6 months through 14 years, regardless of vaccination status or history of disease. Expansion to older children is of lesser priority and should be based on evidence of high susceptibility among this age group.</p> <p>Children who are vaccinated against measles before 9 months of age must receive a second measles vaccination. This should be given as soon as possible after 9 months, with an interval of at least 1 month between doses.</p> <p>All children aged 6 months to 59 months should also receive prophylactic vitamin A supplementation. If there is evidence of clinical vitamin A deficiency in older age groups, treatment with vitamin A should be initiated as per WHO guidelines.</p> <p>To ensure safety of injection during immunization, auto-disable syringes and safety boxes are recommended. Safe disposal of used sharps should be ensured.</p>
Outbreak response	<p>Inform the health authorities immediately if one or more suspected cases are identified.</p> <p>Confirm the suspected outbreak, following WHO guidelines.</p> <p>Investigate suspected case: check if it fulfils the case definition, record date of onset, age and vaccination status.</p> <p>Confirm the diagnosis: collect blood specimen from 3–5 initial reported cases.</p> <p>Assess the extent of the outbreak and the population at risk.</p> <p>Implement outbreak response measures as follows:</p> <ul style="list-style-type: none"> – Give priority to proper <u>case management</u> and <u>immunization of groups at highest risk (e.g. children aged 6 months through 14 years)</u> as soon as possible even in areas not yet affected but where the outbreak is likely to spread. – Promote social mobilization of parents in order to ensure that previously unvaccinated children aged from 6 months to 59 months are immunized. – The presence of several cases of measles in an emergency setting does not preclude a measles immunization campaign. Even among individuals who have already been exposed to, and are incubating, the natural virus, measles vaccine, if given within 3 days of exposure, may provide protection or mitigate the clinical severity of the illness. – Isolation is not indicated and children should not be withdrawn from feeding programmes.

Case management	<p>For uncomplicated cases:</p> <ul style="list-style-type: none"> – Give vitamin A immediately upon diagnosis and ensure the child receives a second dose the next day (can be given to parent to administer at home). – Advise the parent to treat the child at home (control fever and provide nutritional feeding). <p>For cases with non-severe eye, mouth or ear complications:</p> <ul style="list-style-type: none"> – Children can be treated at home. – Give vitamin A immediately upon diagnosis and ensure that the child receives a second dose the next day (can be given to parent to administer at home). – If pus draining from the eyes, clean eyes and treat with 1% tetracycline eye ointment. – If mouth ulcers, treat with gentian violet. – If pus draining from the ear, clean ear discharge and treat with antibiotics for 5 days (amoxicillin, first-line; or co-trimoxazole second-line - as per national Acute lower respiratory tract infection (ALRI) policy and Integrated Management of Childhood illnesses (IMCI) guidelines currently under development). – Treat malnutrition and diarrhoea, if present, with sufficient fluids and high-quality diet. <p>For cases with severe, complicated measles (any general danger signs*, clouding of cornea, deep or extensive mouth ulcers, pneumonia):</p> <ul style="list-style-type: none"> – Refer urgently to hospital. – Treat pneumonia with an appropriate antibiotic. – If clouding of the cornea or pus draining from the eye, clean eyes and apply 1% tetracycline eye ointment. – If the child has any eye signs indicating vitamin A deficiency (i.e. night blindness, Bitot spots, conjunctival and corneal dryness, corneal clouding or corneal ulceration), a third dose of vitamin A should be given 2–4 weeks later. <p>* Inability to drink or breastfeed, vomiting everything, convulsions, lethargy or unconsciousness.</p>
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11. MENINGOCOCCAL DISEASE (MENINGITIS AND SEPTICAEMIC FORM)

DESCRIPTION

Infectious agent	<p>Bacteria: <i>Neisseria meningitidis</i> serogroups A, B, C, Y, W135. <i>Streptococcus pneumoniae</i>. <i>Haemophilus influenzae</i>.</p> <p>Viral meningitis is rarely serious and may be caused by any number of viruses (such as coxsackie virus or enterovirus).</p>
Case definition	<p>Clinical case definition: An illness with sudden onset of fever (>38.5 °C rectal; >38.0 °C axillary) and one or more of the following:</p> <ul style="list-style-type: none"> – neck stiffness – altered consciousness – other meningeal sign or petechial or purpural rash. <p>In patients aged under one year, suspect meningitis when fever is accompanied by bulging fontanelle.</p> <p>Laboratory criteria: Positive CSF antigen detection, or Positive culture.</p> <p>Case classification: Suspected: a case that meets the clinical case definition above. Probable: a suspected case as defined above and: – Turbid CSF (with or without positive Gram-stain), or – Ongoing epidemic and epidemiological link to a confirmed case. Confirmed: a suspected or probable case with laboratory confirmation.</p>
Mode of transmission	Direct contact with respiratory droplets.
Incubation	Incubation period varies between 2–10 days; most commonly 4 days.
Period of communicability	From the onset of symptoms until 24 hours after institution of therapy, but the most important sources of infection are asymptomatic carriers.

EPIDEMIOLOGY

Burden	No data available.
Geographical distribution	No data available.
Seasonality	No information available.
Alert threshold¹	<p>Intervention: (1) inform authorities; (2) investigate; (3) confirm; (4) treat cases; (5) strengthen surveillance; (6) prepare.</p> <p>Population >30 000: 5 cases per 100 000 inhabitants per week or a cluster of cases in an area.</p> <p>Population <30 000: 2 cases in 1 week or an increase in the number of cases compared with previous non-epidemic years.</p>

¹ Detecting meningococcal meningitis epidemics in highly-endemic African countries. Weekly Epidemiological Record, 2000, 38: 306–309.

Epidemic threshold	<p>Intervention: (1) mass vaccination; (2) distribute treatment to health centres; (3) treat according to epidemic protocol; (4) inform the public.</p> <p>Population >30 000:</p> <ul style="list-style-type: none"> – 10 cases per 100 000 inhabitants per week if no epidemic for 3 years and vaccination coverage <80% or alert threshold crossed early in the dry season. – 15 cases per 100 000 inhabitants per week in other situations. <p>Population <30 000:</p> <p>The population should be vaccinated if:</p> <ul style="list-style-type: none"> – 5 cases in 1 week or – Doubling of the number of cases in a 3-week period or – For mass gatherings and displaced populations, 2 confirmed cases in 1 week. <p>Other situations should be studied on a case-by-case basis.</p> <p>Intervention:</p> <ol style="list-style-type: none"> 1. Mass vaccination. 2. Distribute treatment to health centres. 3. Treat according to epidemic protocol. 4. Inform the public. <p>Caution: Current thresholds have been established from data in meningitis belt countries in sub-sahara Africa and have not been validated in countries outside the belt.</p>
Recent epidemics in the country	<p>No data available.</p> <p>However, in May 2000 fourteen cases, including 6 deaths, were reported amongst Indonesian pilgrims returning from Haj. One case was laboratory confirmed for <i>N. meningitidis</i> serogroup B.</p>

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Travel, migration and displacement facilitate the circulation of virulent strains within a country or from country to country.
Overcrowding	Yes	High density of susceptible people is an important risk factor for outbreaks. Internally displaced populations and refugee camps, crowding because of cattle or fishing-related activities, military camps and schools facilitate spread of the disease.
Poor access to health services	Yes	Case identification is crucial to rapidly implement control measures. The case-fatality rate without treatment is very high .
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	No	Concurrent infections: upper respiratory tract infections may contribute to some meningococcal outbreaks. Dry and windy/dusty conditions increase transmission of the disease.
Risk assessment conclusions	<p>Displaced populations are at an increased risk of meningitis owing to over crowding, poor hygiene and poor access to health care. 80% of cases occur in those under 30 years of age.</p> <p>Without appropriate treatment the case-fatality rate in meningococcal meningitis can be as high as 50%; with treatment it can be reduced to 5 - 15%.</p>	

PREVENTION AND CONTROL MEASURES

Case management	<p>Meningococcal disease (either meningitis or septicaemia) is potentially fatal and should always be viewed as a medical emergency.</p> <p>NON-EPIDEMIC CONDITIONS:</p> <ul style="list-style-type: none"> • Admission to a hospital or health centre is necessary for diagnosis (<u>lumbar puncture and CSF examination</u>). As soon as meningitis is suspected, a lumbar puncture must be done before starting antibiotic treatment • As infectivity of patients is moderate and disappears quickly following antimicrobial treatment, isolation of the patient is not necessary. • <u>Antimicrobial treatment</u> must be instituted as soon as possible after lumbar puncture (without waiting for laboratory results), and should be combined with supportive treatment. <p>Initial antimicrobial therapy should be effective against the three major causes of bacterial meningitis until bacteriological results are available:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">AGE GROUP</th> <th rowspan="2">PROBABLE PATHOGENS</th> <th colspan="2">ANTIBIOTIC THERAPY</th> </tr> <tr> <th>FIRST CHOICE</th> <th>ALTERNATIVE</th> </tr> </thead> <tbody> <tr> <td>Adults and children < 5years</td> <td><i>S. pneumoniae</i></td> <td>Benzylpenicillin</td> <td>Ampicillin or amoxicillin Chloramphenicol Ceftriaxone or cefotaxime</td> </tr> <tr> <td>Children 1 month - 5 years</td> <td><i>H. Influenza</i> <i>S. pneumoniae</i> <i>N. meningitidis</i></td> <td>Ampicillin or amoxicillin^a</td> <td>Chloramphenicol Ceftriaxone or cefotaxime</td> </tr> <tr> <td>Neonates</td> <td>Gram-negative bacteria Group B streptococci <i>Listeria</i></td> <td>Ampicillin and gentamicin</td> <td>Ceftriaxone or cefotaxime^b</td> </tr> </tbody> </table> <p>^a If <i>H. influenzae</i> is highly resistant to ampicillin, chloramphenicol should be given with ampicillin. ^b No effect on <i>Listeria</i>.</p> <p>Once diagnosis of meningococcal disease has been established, many antimicrobials can be used:</p> <ul style="list-style-type: none"> – either <i>penicillin</i> or <i>ampicillin</i> is the drug of choice. – <i>Chloramphenicol</i> is a good and inexpensive alternative. – The third-generation cephalosporins, <i>ceftriaxone</i> and <i>cefotaxime</i>, are excellent alternatives but are considerably more expensive. – A 7-day course is still the general rule for the treatment of meningococcal disease (except in the neonatal period where a 14-day course is given). – The long-acting (oily) form of chloramphenicol has also been shown to be effective. <p>The Indonesia Federal Ministry of Health recommends injectable oily chloramphenicol and <i>benzylpenicillin</i>.</p> <p>EPIDEMIC CONDITIONS:</p> <p>During epidemics of confirmed meningococcal disease, case management needs to be simplified to permit the health system to respond to rapidly increasing numbers of cases.</p> <ul style="list-style-type: none"> • Diagnosis: as the flood of patients could make the routine use of lumbar puncture to confirm meningitis impossible, every suspected case of meningitis should be considered and treated as one of meningococcal meningitis. • Treatment: simplified treatment protocols are appropriate: long-acting <u>oily chloramphenicol</u> (100 mg/kg up to 3 g in a single dose) IM is the drug of choice for all age groups, particularly in areas with limited health facilities. For patients who do not improve rapidly, an additional dose of the same antimicrobial is recommended 48 hours later. 	AGE GROUP	PROBABLE PATHOGENS	ANTIBIOTIC THERAPY		FIRST CHOICE	ALTERNATIVE	Adults and children < 5years	<i>S. pneumoniae</i>	Benzylpenicillin	Ampicillin or amoxicillin Chloramphenicol Ceftriaxone or cefotaxime	Children 1 month - 5 years	<i>H. Influenza</i> <i>S. pneumoniae</i> <i>N. meningitidis</i>	Ampicillin or amoxicillin ^a	Chloramphenicol Ceftriaxone or cefotaxime	Neonates	Gram-negative bacteria Group B streptococci <i>Listeria</i>	Ampicillin and gentamicin	Ceftriaxone or cefotaxime ^b
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Prevention	<p><u>NON-EPIDEMIC CONDITIONS:</u></p> <ul style="list-style-type: none"> • Vaccination: to prevent secondary cases around a sporadic case of meningococcal disease, vaccine can be used for close contacts of patients with meningococcal disease due to serogroup A, C or W135. • Chemoprophylaxis: the aim of chemoprophylaxis is to prevent secondary cases by eliminating nasopharyngeal carriage. To be effective in preventing secondary cases, chemoprophylaxis must be initiated as soon as possible (i.e. not later than 48 hours after diagnosis of the case). Its use should be restricted to close contacts of a case, which are defined as: <ul style="list-style-type: none"> – Household members (i.e. persons sleeping in the same dwelling as the case); – Institutional contacts (i.e. persons who share sleeping quarters (i.e. roommates in boarding schools; persons sharing a barracks in military camps); nursery school or childcare centre contacts (i.e. children and teachers who share a classroom with the case); – Other persons who have had contact with the patient's oral secretions through kissing or sharing of food and beverages.
	<p><u>EPIDEMIC CONDITIONS</u></p> <p>Vaccination: a mass vaccination campaign, if appropriately carried out, can halt an epidemic of meningococcal disease. Laboratory diagnosis and confirmation of epidemic serogroups will guide the type of vaccine needed, either meningococcal polysaccharide bivalent A/C (if serogroup A or C is confirmed as the epidemic serogroup), or meningococcal polysaccharide tetravalent vaccine A/C/Y/W135 (if serogroup Y or W135 is confirmed). Vaccination should be targeted to areas where the epidemic threshold is reached.</p> <p>IDP camp population: Following confirmation (serogroup identified) of two cases, mass vaccination is recommended if the serogroup/s identified is/are included in either the bivalent (A/C) or tetravalent (A/C/Y/W135) vaccine. At-risk populations (e.g. aged 2–30 years) should be given priority.</p> <ul style="list-style-type: none"> – General population: If an outbreak is suspected, vaccination should only be considered after careful investigation (including confirmation and serogroup identification) and the assessment of the population group at highest risk. <p>Chemoprophylaxis: chemoprophylaxis of contacts of meningitis patients is NOT warranted during an epidemic for several reasons. In small clusters or outbreaks among closed populations (e.g. extended household, boarding schools), chemoprophylaxis may still be appropriate.</p>

12. PERTUSSIS (WHOOPIING COUGH)

DESCRIPTION

Infectious agent	<i>Bordetella pertussis</i> , the pertussis bacillus.
Case definition	<p>Clinical description:</p> <p>The initial stage, the catarrhal stage, is characterized by the insidious onset of coryza (runny nose), sneezing, low-grade fever and a mild, occasional cough, similar to the common cold. The cough gradually becomes more severe and irritating, and after 1–2 weeks the second stage, or paroxysmal stage, begins. The patient has bursts, or paroxysms, of numerous, rapid coughs, apparently due to difficulty in expelling thick mucus from the tracheobronchial tree. The characteristic whoop is caused by forced inspiration through a narrowed glottis immediately after a paroxysm of a dozen or more rapid, short coughs without intervening inspiration.</p> <p>In younger infants, periods of apnoea may follow the coughing spasms, and the patient may become cyanotic (turn blue). Pneumonia is a relatively common complication (reported 21.7% of cases in developed countries); otitis, haemorrhages (subconjunctival petechiae and epistaxis), convulsions, encephalopathies and death occur more rarely). The disease lasts 4–8 weeks. Complications are more frequent and severe in younger infants. In developed countries, the case-fatality rate among infants aged less than 1 month has been reported to be around 1%. Older persons (adolescent and adults) and those partially protected by the vaccine may become infected with <i>B. pertussis</i> but usually have milder disease.</p> <p>In the convalescent stage, recovery is gradual. The paroxysms become less frequent and milder and the whoop disappears. However, paroxysms often recur with subsequent respiratory infections for many months after the onset of pertussis. Fever is generally minimal throughout the course of pertussis.</p> <p>Clinical case definition: A case diagnosed as pertussis by a physician, or A cough illness lasting at least 2 weeks with at least one of the following symptoms: – Paroxysms (i.e. fits) of coughing – Inspiratory "whooping" or – Post-tussive vomiting (i.e. vomiting immediately after coughing). without other apparent cause.</p> <p>Laboratory criteria:</p> <ul style="list-style-type: none"> – Isolation of <i>Bordetella pertussis</i> from clinical specimen, or – Positive polymerase chain reaction (PCR) for <i>B. pertussis</i> – Four-fold increase in antibody titer in paired serum samples. <p>Case classification: Probable case: A case that meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory confirmed case. Confirmed case: A case that is laboratory-confirmed, or one that meets the clinical case definition and is either laboratory confirmed, or epidemiologically linked to a laboratory confirmed case (Source: Case definitions for Infectious Conditions under Public Health Surveillance, MMWR 1997).</p>
Mode of transmission	<p>Airborne route via droplets produced by coughing or sneezing. Humans are the only hosts.</p> <p>Although the disease may be milder in older persons, these infected persons may transmit the disease to other susceptible persons, including non-immunized or under-immunized infants. An adult is often found to be the first case in a household with multiple pertussis cases.</p>
Incubation	The incubation period usually lasts 5–10 days; rarely more than 14 days.

Period of communicability	<p>Pertussis is highly communicable during the first two weeks of clinical illness. Communicability gradually decreases after onset of paroxysmal cough.</p> <p>Untreated patients may be contagious for up to 3 weeks after onset of paroxysmal cough without treatment or for up to 5 days after onset of treatment.</p>
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EPIDEMIOLOGY

Burden	Number of cases reported nationally:			
	2003	3915	1990	30014
	2002	2113	1980	32999
	2001	1025		
	2000	142		
	1999	287		
	1998	-		
	1997	6934	(Data source: WHO Vaccine Preventable Diseases 2004 Global Summary)	
	1996	9041		
1995	8772			
Geographical distribution	Country wide.			
Seasonality	Pertussis has no distinct seasonal pattern, but activity may increase in the summer and autumn.			
Alert threshold	<p>Once suspected, a probable or confirmed case must be investigated.</p> <p>All outbreaks must be investigated immediately and laboratory confirmed. During an outbreak, information on age groups and immunization status of cases must be collected.</p>			
Recent epidemics in the country	No data available.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Importation and spread of <i>B. pertussis</i> .
Overcrowding	Yes	Crowded conditions facilitate transmission. The disease is usually introduced into a household by an older sibling or a parent.
Poor access to health services	Yes	No access to routine immunization services. Susceptibility of non-immunized individuals is universal, and vaccination is the mainstay of pertussis control.
Food shortages	No	
Lack of safe water and poor sanitation	No	

Others	Yes	<p>Low DTP3 coverage (<80%).</p> <p><u>National DTP3 coverage (%)</u></p> <table border="1"> <tr> <td>2003</td> <td>70</td> <td>1990</td> <td>60</td> </tr> <tr> <td>2002</td> <td>70</td> <td>1980</td> <td>No data</td> </tr> <tr> <td>2001</td> <td>76</td> <td></td> <td></td> </tr> <tr> <td>2000</td> <td>75</td> <td></td> <td></td> </tr> <tr> <td>1999</td> <td>74</td> <td></td> <td></td> </tr> <tr> <td>1998</td> <td>74</td> <td></td> <td></td> </tr> <tr> <td>1997</td> <td>73</td> <td></td> <td></td> </tr> <tr> <td>1996</td> <td>72</td> <td></td> <td></td> </tr> <tr> <td>1995</td> <td>69</td> <td></td> <td></td> </tr> </table> <p>(Data source: WHO Vaccine Preventable Diseases 2004 Global Summary)</p>	2003	70	1990	60	2002	70	1980	No data	2001	76			2000	75			1999	74			1998	74			1997	73			1996	72			1995	69		
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Risk assessment conclusions		<p>Yearly fluctuations in the number of reported cases reflect a weak surveillance system.</p> <p>Pertussis is a potential problem if introduced into crowded conditions such as IDP camps with many non-immunized children. It is highly contagious. Children aged under 1 year and pregnant women are at greatest risk.</p>																																				

PREVENTION AND CONTROL MEASURES

Case management	<ul style="list-style-type: none"> Erythromycin or erythromycin estolate or – in case of allergies to erythromycin – trimethoprim–sulfamethoxazole (contraindicated during pregnancy) should be administered for 7–14 days to all cases and close contacts of persons with pertussis, regardless of age and vaccination status. Drug administration both (1) modifies the course of illness (if initiated early) and (2) eradicates the organism from secretions, thereby decreasing communicability. Symptomatic treatment and supportive case-management. <p>It is important that vaccination coverage is improved. Health workers should be trained to recognize and treat cases and contacts as indicated below.</p>
Immunization	<p>Vaccination is the most effective way to control pertussis. Active primary immunization against <i>B. pertussis</i> infection with the whole-cell vaccine (wP) is recommended in association with the administration of diphtheria and tetanus toxoids (DTP). No single-antigen pertussis vaccine is available.</p> <p>Although the use of acellular vaccines is less commonly associated with adverse reactions, price considerations affect their use, and wP vaccines are the vaccines of choice for most countries, including Indonesia.</p> <p>In general, pertussis vaccine (wP) is not given to persons aged 7 years or older, since local reactions (convulsions, collapse, high temperature) may be increased in older children and adults.</p> <p>The efficacy of the vaccine in children who have received at least 3 doses is estimated to be 80%: protection is greater against severe disease and begins to wane after about 3 years.</p>

Epidemic control	<p>The highly contagious nature of the disease leads to large numbers of secondary cases among non-immune contacts. Prophylactic antibiotic treatment (with erythromycin) in the early incubation period may prevent disease, but difficulties of early diagnosis, the costs involved and concerns related to the occurrence of drug resistance all limit prophylactic treatment to selected individual cases. Priority must be given to:</p> <ul style="list-style-type: none">• Protecting children aged under 1 year and pregnant females in the last 3 weeks of pregnancy because of the risk of transmission to the newborn.• Stopping infection among household members, particularly if the household includes children aged under 1 year and pregnant women in the last 3 weeks of pregnancy. <p>The strategy relies on chemoprophylaxis of contacts within a maximum delay of 14 days following the first contact with the index case. Index cases must avoid contact with childcare centres, schools and other places where susceptible individuals are grouped for up to 5 days after starting treatment, or for up to 3 weeks after onset of paroxysmal cough, or until the end of cough, whichever comes first.</p> <p>All contact cases must have their immunization status verified and brought up to date.</p>
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13. POLIOMYELITIS

DESCRIPTION

Infectious agent	Poliovirus (Enterovirus group): types 1, 2, 3.
Case definition and classification	<p>Clinical description:</p> <p>All three types of wild poliovirus may cause paralysis, although most infections (at least 95%) remain asymptomatic.</p> <p>Most symptomatic cases report a nonspecific febrile illness lasting a few days, corresponding to the viraemic phase of the disease. In a few cases, fever can be followed by the abrupt onset of meningitic and neuromuscular symptoms such as stiffness in the neck and pain in the limbs. Initial symptoms may also include fatigue, headaches, vomiting, constipation (or, less commonly, diarrhoea). In a very small percentage of cases (≤ 1 of 100 infected susceptible persons), this is followed by gradual onset (2–4 days) of flaccid paralysis. Paralytic disease usually affects the lower limbs and is typically asymmetric and more severe proximally. Bulbar (brainstem) paralysis may also occasionally occur, leading to respiratory muscle involvement and death unless artificial respiration can be applied. The mortality from paralytic poliomyelitis is 2–10%, mainly as a result of bulbar involvement and/or respiratory failure.</p> <ul style="list-style-type: none"> • Risk factors for paralytic disease are a large inoculum of virus, increasing age, pregnancy, recent tonsillectomy, strenuous exercise and intramuscular injections during the incubation period. • After the acute illness there is often a degree of recovery of muscle function; 80% of eventual recovery occurs within 6 months, although recovery of muscle function may continue for up to 2 years. • After many years of stable neurological impairment, new neuromuscular symptoms (weakness, pain and fatigue) develop (post-polio syndrome) in 25–40% of patients. <p>Clinical case definition:</p> <ul style="list-style-type: none"> • Acute flaccid paralysis (AFP) in a child aged <15 years, including Guillain–Barré syndrome*; or • Any paralytic illness in a person of any age when poliomyelitis is suspected. <p>* For practical reasons, Guillain–Barré syndrome is considered as poliomyelitis unless proven otherwise.</p> <p>Case classification:</p> <ul style="list-style-type: none"> • <u>Suspected</u>: A case that meets the clinical case definition. • <u>Confirmed</u>: AFP with laboratory-confirmed wild poliovirus in stool sample. • <u>Polio-compatible</u>: AFP clinically compatible with poliomyelitis, but without adequate virological investigation.
Mode of transmission	Poliovirus is highly communicable. Transmission is primarily from person to person via the faecal–oral route.
Incubation	The time between infection and onset of paralysis is 4–30 days.
Period of communicability	From 36 hours after infection, for 4–6 weeks.

EPIDEMIOLOGY

Burden	Number of confirmed wild polio virus cases reported in Indonesia:			
	2003	0	1994	10
	2002	0	1993	10
	2001	0	1992	79
	2000	35	1991	211
	1999	39	1990	465
	1998	49	1980	182
	1997	293		
	1996	77		
	1995	12		
	(Source: WHO/Polio Eradication Initiative, 2004)			
Geographical distribution	Not applicable.			
Seasonality	No data available.			
Alert threshold	Any AFP case must be notified and investigated.			
Recent epidemics in the country	Last wild polio virus case was reported in 2000. The South Eastern Asia region is still endemic for polio.			

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Importation of virus from endemic areas.																																				
Overcrowding	Yes	Very important in facilitating transmission.																																				
Poor access to health services	Yes	No access to routine immunization services. Risk of undetected poliovirus circulation.																																				
Food shortages	No																																					
Lack of safe water and poor sanitation	Yes	Generally poor sanitation.																																				
Others	Yes	Immunization coverage not maintained above recommended level (<80%). <u>National OPV3 vaccination coverage (%)</u> <table border="1"> <tr> <td>2003</td> <td>70</td> <td>1990</td> <td>60</td> </tr> <tr> <td>2002</td> <td>70</td> <td>1980</td> <td>-</td> </tr> <tr> <td>2001</td> <td>70</td> <td></td> <td></td> </tr> <tr> <td>2000</td> <td>67</td> <td></td> <td></td> </tr> <tr> <td>1999</td> <td>71</td> <td></td> <td></td> </tr> <tr> <td>1998</td> <td>75</td> <td></td> <td></td> </tr> <tr> <td>1997</td> <td>79</td> <td></td> <td></td> </tr> <tr> <td>1996</td> <td>83</td> <td></td> <td></td> </tr> <tr> <td>1995</td> <td>71</td> <td></td> <td></td> </tr> </table> (Data source: WHO/Indonesia official country estimates, 2004)	2003	70	1990	60	2002	70	1980	-	2001	70			2000	67			1999	71			1998	75			1997	79			1996	83			1995	71		
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PREVENTION AND CONTROL MEASURES

<p>Risk assessment conclusions</p>	<p>Need to ensure implementation of priority activities to prevent re-introduction of wild-polio virus into Indonesia:</p> <ol style="list-style-type: none"> 1. Maintaining certification level AFP surveillance so that any importation of wild poliovirus is detected early and appropriate measures are undertaken. 2. Strengthening routine EPI coverage to ensure all children are protected with a minimum of 4 doses of OPV. 3. Conducting supplementary immunization activities in selected high risk areas to boost population immunity.
<p>Case management</p>	<p>Management of the acute phase of paralytic poliomyelitis is supportive and symptomatic:</p> <ul style="list-style-type: none"> – Bed rest. – Close monitoring of respiration: respiratory support in case of respiratory failure or pooling of pharyngeal secretions. – Moist hot-packs for muscle pain and spasms. – Passive physical therapy to stimulate muscles and prevent contractures. – Anti-spasmodic drugs. – Frequent turning to prevent bedsores. <p>If hospitalization is required, the patient should be isolated.</p> <p>Disinfection of discharges, faeces and soiled articles, and immediate reporting of further cases are essential.</p>
<p>Immunization</p>	<p>Two types of poliovirus vaccine are available:</p> <ul style="list-style-type: none"> • <u>Oral poliovirus vaccine (OPV):</u> OPV is an orally administered vaccine that includes live attenuated strains of all three virus types. It is easily administered by health workers or volunteers, induces a good humoral (antibody) and mucosal (intestine) immune response and is four times cheaper than inactivated poliovirus vaccine (IPV). OPV is the only vaccine of choice for poliomyelitis eradication because it achieves much better mucosal immunity than IPV while limiting the dissemination of wild poliovirus in the community. • <u>Inactivated poliovirus vaccine (IPV):</u> IPV can be given only by intramuscular injection and requires trained health workers. It elicits an excellent antibody response but only minimal intestinal mucosal response; it is much more expensive than IPV. <p>Indonesia has a routine immunization policy that requires 4 doses of OPV (see Appendix 7: <i>Immunization schedule for Indonesia</i>).</p> <p>However, supplementary immunization activities are also conducted in the country in order to maximize immunization coverage: these consist of national immunization days (NIDs), sub-NIDs (mass campaigns similar to NIDs but confined to a smaller geographical area), and mop-up campaigns, during which 2 OPV doses are given at an interval of 1 month to all children aged under 5 years, preferably during the low transmission season for enteroviruses (the cooler season).</p> <p>Supplementary immunization activities in Indonesia: NIDs started in 1994 for polio eradication activity:</p> <ul style="list-style-type: none"> - 11 national campaigns have been conducted, with two rounds for each. - 5 sub-NIDs in selected high-risk areas conducted two rounds for each. - MNT (maternal and neonatal tetanus elimination campaigns were conducted in high-risk localities (28) from 2000–2003. <p>Among displaced populations, all children aged 0–59 months should be vaccinated on arrival.</p> <p>Any AFP case must be notified and investigated.</p>

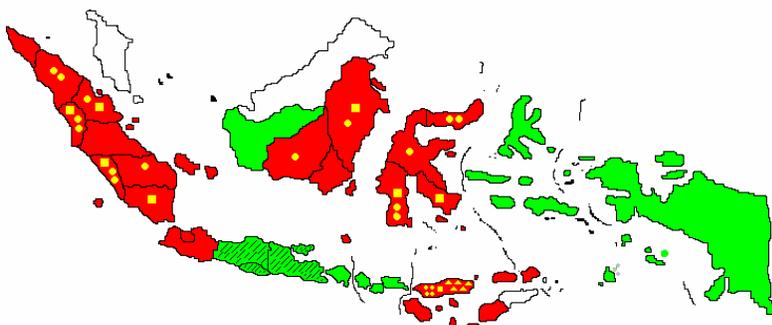
<p>Epidemic Control</p>	<p>In case of a suspected outbreak:</p> <p><u>Investigation</u></p> <ul style="list-style-type: none"> – Clinical and epidemiological investigation. – Rapid virological investigation (2 stool samples taken within 14 days of onset of paralysis should be sent to a WHO-accredited laboratory). <p>Outbreak confirmation will be based on the isolation of wild poliovirus.</p> <p><u>Intervention</u></p> <p>A house-to-house mop-up campaign with OPV should be conducted in a wide geographical area (at least province involved and relevant neighbours) if no NIDs or sub-NIDs are planned to cover the area within the next 3 months. If NIDs or sub-NIDs are planned, focus should be set on ensuring that high-quality immunization activities are implemented in the area of the outbreak and adjacent districts.</p> <p>Surveillance should be enhanced through intensive monitoring of all reporting units, ensuring active surveillance and zero reporting, extensive retrospective record reviews and active case-finding in surrounding areas.</p>
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14. RABIES

DESCRIPTION

Infectious agent	Rabies virus, a Rhabdovirus of the genus <i>Lyssavirus</i> .
Case definition	<p>Clinical description</p> <ul style="list-style-type: none"> • Paresis or paralysis, delirium, convulsions. • Without medical attention, death in about 6 days, usually due to respiratory paralysis. <p>Clinical case definition An acute neurological syndrome (encephalitis) dominated by forms of hyperactivity (furious rabies) or paralytic syndrome (dumb rabies) that progresses towards coma and death, usually from respiratory failure, within 7–10 days after the first symptom.</p> <p>Laboratory criteria One or more of the following:</p> <ul style="list-style-type: none"> – Detection of rabies viral antigens by direct fluorescent antibody (FA) in clinical specimens, preferably brain tissue (collected post mortem). – Detection by FA on skin or corneal smear (collected antemortem). – FA positive after inoculation of brain tissue, saliva or CSF in cell culture, in mice or in suckling mice. – Detectable rabies-neutralizing antibody titre in the CSF of an unvaccinated person. – Identification of viral antigens by PCR on fixed tissue collected post mortem or in a clinical specimen (brain tissue or skin, saliva or urine). – Isolation of rabies virus from clinical specimens and confirmation of rabies viral antigens. <p>Case classification</p> <p>Human rabies:</p> <ul style="list-style-type: none"> – Suspected: A case that is compatible with the clinical case definition. – Probable: A suspected case plus history of contact with a suspected rabid animal. – Confirmed: A suspected case that is laboratory-confirmed. <p>Human exposure to rabies:</p> <ul style="list-style-type: none"> – Possibly exposed: A person who had close contact (usually a bite or a scratch) with a rabies-susceptible animal in (or originating from) a rabies-infected area. – Exposed: A person who had close contact (usually a bite or a scratch) with a laboratory-confirmed rabid animal.
Mode of transmission	<p>Usually through the bite of an infected mammalian species (dog, cat, fox, bats): bites or scratches introduce virus-laden saliva into the human body.</p> <p>No human-to-human transmission has been documented.</p>
Incubation	The incubation period usually ranges from 2 to 10 days but may be longer (up to 7 years).
Period of communicability (to humans)	By an infected dog or cat, usually for 3–7 days before onset of clinical signs (rarely more than 4 days) and throughout the course of the disease. Longer periods of excretion before onset of clinical signs have been observed in other animals.

EPIDEMIOLOGY

<p>Burden</p>	<p>The number of human rabies cases reported nationally fluctuated during the period 1990 - 2000, decreasing slightly from 115 in 1994 to 50 cases in 1990 but increasing again after 1998 as shown below:</p> <table border="1" data-bbox="568 294 1291 514"> <thead> <tr> <th>Year</th> <th>Cases</th> <th>Year</th> <th>Cases</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>110</td> <td>1994</td> <td>115</td> </tr> <tr> <td>1999</td> <td>144</td> <td>1993</td> <td>93</td> </tr> <tr> <td>1998</td> <td>83</td> <td>1992</td> <td>58</td> </tr> <tr> <td>1997</td> <td>50</td> <td>1991</td> <td>93</td> </tr> <tr> <td>1996</td> <td>65</td> <td>1990</td> <td>62</td> </tr> <tr> <td>1995</td> <td>75</td> <td></td> <td></td> </tr> </tbody> </table> <p>(Data source: WHO/CDS – Zoonosis, 2005)</p> <p>All cases were diagnosed on clinical basis, except 4 cases confirmed by laboratory from cornea and saliva specimen.</p> <p>Animal bite cases on the Island of Sumatra, 1990 - 1995.</p> <table border="1" data-bbox="568 693 1425 1050"> <thead> <tr> <th>Province</th> <th>1990</th> <th>1991</th> <th>1992</th> <th>1993</th> <th>1994</th> <th>1995</th> </tr> </thead> <tbody> <tr> <td>Aceh</td> <td>354</td> <td>332</td> <td>410</td> <td>656</td> <td>336</td> <td>322</td> </tr> <tr> <td>North Sumatra</td> <td>2537</td> <td>2462</td> <td>1342</td> <td>1858</td> <td>1777</td> <td>1592</td> </tr> <tr> <td>West Sumatra</td> <td>2092</td> <td>1900</td> <td>2408</td> <td>2275</td> <td>1930</td> <td>1876</td> </tr> <tr> <td>Riau</td> <td>692</td> <td>929</td> <td>603</td> <td>548</td> <td>515</td> <td>501</td> </tr> <tr> <td>Jambi</td> <td>594</td> <td>640</td> <td>499</td> <td>656</td> <td>728</td> <td>704</td> </tr> <tr> <td>Bengkulu</td> <td>282</td> <td>304</td> <td>297</td> <td>407</td> <td>397</td> <td>687</td> </tr> <tr> <td>South Sumatra</td> <td>1036</td> <td>1465</td> <td>1264</td> <td>615</td> <td>997</td> <td>966</td> </tr> <tr> <td>Lampung</td> <td>1082</td> <td>1026</td> <td>568</td> <td>1104</td> <td>845</td> <td>881</td> </tr> </tbody> </table> <p>(Data source: WHO/CDS – Zoonosis; Country reports. <i>Third international symposium on Rabies control in Asia</i>).</p>	Year	Cases	Year	Cases	2000	110	1994	115	1999	144	1993	93	1998	83	1992	58	1997	50	1991	93	1996	65	1990	62	1995	75			Province	1990	1991	1992	1993	1994	1995	Aceh	354	332	410	656	336	322	North Sumatra	2537	2462	1342	1858	1777	1592	West Sumatra	2092	1900	2408	2275	1930	1876	Riau	692	929	603	548	515	501	Jambi	594	640	499	656	728	704	Bengkulu	282	304	297	407	397	687	South Sumatra	1036	1465	1264	615	997	966	Lampung	1082	1026	568	1104	845	881
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<p>Geographical distribution</p>	<p>Foci of human disease occur in limited areas within the country – including Sumatra. Foci of animal disease occur in some other parts of the country.</p> <p style="text-align: center;">NUMBER OF HUMAN RABIES IN INDONESIA, 2000</p>  <ul style="list-style-type: none"> <li style="width: 45%;">● One human rabies <li style="width: 45%;">■ Rabies affected area <li style="width: 45%;">■ Rabies free area <li style="width: 45%;">■ Has been free since 1997 <li style="width: 45%;">■ Five human rabies <li style="width: 45%;">▲ Ten human rabies 																																																																																											
<p>Seasonality</p>	<p>No seasonality reported.</p>																																																																																											
<p>Alert threshold</p>	<p>One case in a susceptible animal species and/or human must lead to an alert.</p>																																																																																											

Recent epidemics	Not an epidemic prone disease.
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RISK FACTORS FOR INCREASED BURDEN

Population movement	No	
Overcrowding	Yes	An infected animal has the potential to bite more people due to an increased dog population density parallel to humans.
Poor access to health services	Yes	Increased risk of fatality where health facilities to provide proper wound debridement with water, detergent and disinfectants are lacking. Prompt administration of vaccine post exposure (plus immunoglobulin if heavy exposure) is the only way to avoid death of an infected person.
Food shortages	No	
Lack of safe water and poor sanitation	No	
Others	Yes	Poorly secured or easily accessible food sources increases the number of dogs and wild numbers near displaced populations. Children aged 5–15 years are the group at major risk.
Risk assessment conclusions		Risk of epidemics for humans is significant if cases of rabies are reported in dogs or other susceptible animals in the same zone.

PREVENTION AND CONTROL MEASURES

Case management	<p>There is no treatment for rabies once the symptoms have appeared. Rabies is a fatal disease under most circumstances.</p> <p>The most effective way to prevent rabies after exposure is to wash and flush the wound or point of contact with soap and water, detergent or plain water, then apply ethanol or tincture or aqueous solution of iodine. Anti-rabies vaccine should be given for Category II and III exposures as soon as possible, according to WHO recognized regimens (see below). Anti-rabies immunoglobulin should be applied for Category III exposures only. Suturing should be postponed if possible; if it is necessary, immunoglobulin must be applied first. Where indicated, antitetanus treatment, antimicrobials and drugs should be administered to control infections other than rabies.</p> <p>Recommended treatments according to type of contact with suspect animal</p> <table border="1" data-bbox="509 590 1450 1472"> <thead> <tr> <th data-bbox="509 590 662 730">Category</th> <th data-bbox="662 590 997 730">Type of contact with a suspect or confirmed rabid domestic or wild animal, or animal unavailable for testing</th> <th data-bbox="997 590 1133 730">Type of Exposure</th> <th data-bbox="1133 590 1450 730">Recommended treatment.</th> </tr> </thead> <tbody> <tr> <td data-bbox="509 730 662 842">I</td> <td data-bbox="662 730 997 842">Touching or feeding of animals; Licks on intact skin.</td> <td data-bbox="997 730 1133 842">None</td> <td data-bbox="1133 730 1450 842">None, if reliable case history is available.</td> </tr> <tr> <td data-bbox="509 842 662 1171">II</td> <td data-bbox="662 842 997 1171">Nibbling of uncovered skin Minor scratches or abrasions without bleeding</td> <td data-bbox="997 842 1133 1171">Minor exposure</td> <td data-bbox="1133 842 1450 1171">Administer vaccine immediately Stop treatment if animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and proven to be negative for rabies by a reliable laboratory using appropriate diagnostic techniques.</td> </tr> <tr> <td data-bbox="509 1171 662 1472">III</td> <td data-bbox="662 1171 997 1472">Single or multiple transdermal bites or scratches, licks on broken skin Contamination of mucous membrane with saliva (i.e. licks) Exposures to bats</td> <td data-bbox="997 1171 1133 1472">Severe exposure</td> <td data-bbox="1133 1171 1450 1472">Administer rabies immunoglobulin and vaccine immediately. Stop treatment is animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and found to be negative for rabies using appropriate diagnostic techniques</td> </tr> </tbody> </table>	Category	Type of contact with a suspect or confirmed rabid domestic or wild animal, or animal unavailable for testing	Type of Exposure	Recommended treatment.	I	Touching or feeding of animals; Licks on intact skin.	None	None, if reliable case history is available.	II	Nibbling of uncovered skin Minor scratches or abrasions without bleeding	Minor exposure	Administer vaccine immediately Stop treatment if animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and proven to be negative for rabies by a reliable laboratory using appropriate diagnostic techniques.	III	Single or multiple transdermal bites or scratches, licks on broken skin Contamination of mucous membrane with saliva (i.e. licks) Exposures to bats	Severe exposure	Administer rabies immunoglobulin and vaccine immediately. Stop treatment is animal remains healthy throughout an observation period of 10 days or if animal is humanely killed and found to be negative for rabies using appropriate diagnostic techniques
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Epidemic control	<p>Immediate notification if one or more suspected cases are identified. Confirm the outbreak in accordance with WHO guidelines. Confirm diagnosis and ensure prompt management.</p>																
Prevention	<p>WHO promotes human rabies prevention through:</p> <ul style="list-style-type: none"> - Well-targeted post exposure treatment using modern vaccine types and, when appropriate, antirabies immunoglobulin - Increased availability of modern rabies vaccine. <p>Elimination of dog rabies through mass vaccination of dogs and dog population management.</p>																
Immunization	<p>Preventive mass vaccination in humans is generally not recommended but can be considered under certain circumstances for the age group 5–15 years.</p>																

15. SOIL-TRANSMITTED HELMINTHIASES (Ascariasis, Hookworm infection, Trichuriasis)

DESCRIPTION

Infectious agent	Helminths: <i>Ascaris lumbricoides</i> , hookworm, <i>Trichuris trichiura</i>
Case definition	<ul style="list-style-type: none"> • Ascariasis: <u>Suspected:</u> Abdominal or respiratory symptoms and history of passing worms. <u>Confirmed:</u> Suspected case and passage of <i>A. lumbricoides</i> (anus, mouth, nose), or presence of <i>A. lumbricoides</i> eggs in stools (microscopy). • Hookworm infection: <u>Suspected:</u> Severe anaemia for which there is no other obvious cause. <u>Confirmed:</u> Suspected case and presence of hookworm eggs in stools (microscopy). • Trichuriasis: <u>Suspected:</u> Bloody, mucoid stools. <u>Confirmed:</u> Suspected case and presence of <i>T. trichiura</i> eggs in stools.
Mode of transmission	<ul style="list-style-type: none"> – Ingestion of eggs, mainly as a food contaminant: <i>A. lumbricoides</i> and <i>T. trichiura</i> – Active penetration of skin by larvae in the soil: Hookworm
Incubation	<ul style="list-style-type: none"> – 4–8 weeks for <i>A. lumbricoides</i> – a few weeks to many months for hookworm – unspecified for <i>T. trichiura</i>.
Period of communicability	<ul style="list-style-type: none"> – <i>A. lumbricoides</i>: eggs appear in the faeces 45–75 days after ingestion and become infective in soil after 2–3 weeks. They can remain viable in soil for years. Infected people can contaminate soil as long as mature fertilized female worms live in the intestine (lifespan of adult worms can be 12–24 months). – Hookworm: eggs appear in the faeces 6–7 weeks after infection. As larvae they become infective in soil after 7–10 days and can remain infective for several weeks. Infected people can contaminate soil for several years. – <i>T. trichiura</i>: eggs appear in the faeces 70–90 days after ingestion and become infective in soil after 10–14 days. Infected people can contaminate soil for several years.

EPIDEMIOLOGY

<p>Burden</p>	<p>The tropical climate of Indonesia is highly favourable for the persistence of STH. The most important species in this country are <i>Ascaris</i>, <i>Trichuris</i> and <i>N. americanus</i>.</p> <p>The most recent survey data from school age children 2004 found the following prevalence rates:</p> <p><i>Central Sulawesi</i> <i>Ascaris</i> 19.5%: <i>Trichuris</i> 22.7%: <i>Hookworm</i> 1.9%: TOTAL 32%. <i>Banten</i> <i>Ascaris</i> 41.3%: <i>Trichuris</i> 35.3%: <i>Hookworm</i> 19.7%: TOTAL 50%. <i>West Java</i> <i>Ascaris</i> 16.7%: <i>Trichuris</i> 4.8%: <i>Hookworm</i> 0.6%: TOTAL 18.3%. <i>South Sumatra</i> <i>Ascaris</i> 22.8%: <i>Trichuris</i> 31.7%: <i>Hookworm</i> 0.0%: TOTAL 44.0%. <i>West Kalimantan</i> <i>Ascaris</i> 13.9%: <i>Trichuris</i> 6.3%: <i>Hookworm</i> 9.7%: TOTAL 29.9%. (Data source: WHO/CDS/CPE, 2005)</p> <p>Control programmes covering several areas have been in effect for several years. Conducted by the Government through local health units, these programmes distribute anthelmintics and provide health education to school-children. However, a consistent reduction in the prevalence of STH has not been achieved.</p> <p>A national planning workshop was held on 6-7 September 2004 and a draft plan was developed. A recent review of the situation concluded that the wide distribution of STH made national control difficult and several methods of control should be developed to deal with the different situations in different areas of the country.</p>
<p>Geographical distribution</p>	<p>Soil-transmitted helminthiases have been reported in southern Indonesia*.</p> <div data-bbox="532 930 1356 1480"> <p>Prevalence of soil-transmitted helminths (STH) by administrative level 1 in Indonesia, latest year available</p> <p>Prevalence</p> <ul style="list-style-type: none"> Dark red: ≥ 70% (High) Medium red: ≥ 50% but < 70% (Moderate) Light red: < 50% (Low) Grey: No data <p>Data source: WHO Global Databank on schistosomiasis and soil-transmitted helminths (STH) © WHO 2004. All rights reserved</p> </div> <p>*Map only reflects data made available to WHO/HQ, 2004.</p>
<p>Seasonality</p>	<p>Not applicable.</p>
<p>Recent epidemics in the country</p>	<p>Not applicable.</p>

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	Strictly linked to insufficient sanitation resources. Not a risk factor if people remain in the same place for a period shorter than the time needed for eggs to be discharged by an infected patient and become infective themselves (at least 45–50 days).
Overcrowding	Yes	Linked to the number of people defecating and to unsafe faeces disposal.
Poor access to health services	Yes	Increases the disease burden in the population thereby sustaining sources of reinfection.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The number of people relative to available sanitation facilities is the most important risk factor.
Others	No	
Risk assessment conclusions		Risk remains high where there is inadequate water and sanitation, population displacement and overcrowding. Interruption of school treatment programs will result in a rise of disease prevalence rates among the displaced population.

PREVENTION AND CONTROL MEASURES

Case management	<p>For treatment, WHO recommends the following four drugs: albendazole 400 mg, or levamisole 2.5 mg/kg, or mebendazole 500 mg, or pyrantel 10 mg/kg (less commonly used elsewhere because it is more difficult to administer - but frequently used in Indonesia as praziquantel-oxantel combination).</p> <p>Note 1: <i>These drugs must not be given during the first trimester of pregnancy.</i> Note 2: <i>Where mass treatment with albendazole for filariasis is envisaged, chemotherapy of intestinal helminths will take place as part of the antifilarial chemoprophylaxis.</i></p>												
Prevention and control	<p>Overall:</p> <p>Personal hygiene, disposal of faeces, hand-washing and clean food Improvements in sanitation standards (see Appendix 3: <i>Safe water and sanitation</i>) Community-wide treatment according to the following categories:</p> <p>Community diagnosis (through primary-school surveys) and treatment regimen for STH:</p> <table border="1"> <thead> <tr> <th>Community category of any infection</th> <th>Prevalence</th> <th>% of moderate-to-heavy intensity infections</th> </tr> </thead> <tbody> <tr> <td>I (high prevalence–high intensity)</td> <td>≥70%</td> <td>≥10%</td> </tr> <tr> <td>II (high prevalence–low intensity)</td> <td>≥50% but <70%</td> <td><10%</td> </tr> <tr> <td>III (low prevalence–low intensity)</td> <td><50%</td> <td><10%</td> </tr> </tbody> </table>	Community category of any infection	Prevalence	% of moderate-to-heavy intensity infections	I (high prevalence–high intensity)	≥70%	≥10%	II (high prevalence–low intensity)	≥50% but <70%	<10%	III (low prevalence–low intensity)	<50%	<10%
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II (high prevalence–low intensity)	≥50% but <70%	<10%											
III (low prevalence–low intensity)	<50%	<10%											

	<p>Category I:</p> <ul style="list-style-type: none"> • <i>Intervention in schools (enrolled and non-enrolled children):</i> Targeted treatment of school-age children, 2–3 times a year. • <i>Health services and community-based intervention:</i> Systematic treatment of pre-school children and women of childbearing age in mother and child health programmes. <p>Category II:</p> <ul style="list-style-type: none"> • <i>Intervention in schools (enrolled and non-enrolled children):</i> Targeted treatment of school-age children, once a year. • <i>Health services and community-based intervention:</i> Systematic treatment of pre-school children and women of childbearing age in mother and child health programmes. <p>Category III:</p> <ul style="list-style-type: none"> • <i>Intervention in schools (enrolled and non-enrolled children):</i> Selective treatment. • <i>Community-based intervention:</i> Selective treatment. <p>For the definition of classes of intensity and further information, see: <i>Prevention and control of schistosomiasis and soil-transmitted helminthiasis. Report of a WHO Expert Committee.</i> Geneva, WHO, 2002 (WHO Technical Report Series, No. 912).</p> <p>In case of suspected or confirmed hookworm infection, in addition:</p> <ul style="list-style-type: none"> • In highly endemic areas, wear shoes. • Consider drug treatment and iron supplementation during pregnancy.
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16. TETANUS AND TETANUS NEONATORUM

DESCRIPTION

Infectious agent	The tetanus bacillus, <i>Clostridium bacillus</i> , an anaerobic bacterium.
Case definition	<p>Clinical features of tetanus Acute disease of sudden onset characterized by painful muscular contractions, primarily of the masseter and neck muscles, secondarily of trunk muscles. A common first sign suggestive of tetanus in older children and adults is abdominal rigidity, though rigidity is sometimes confined to the region of injury. Generalized spasms occur, frequently induced by sensory stimuli; typical features of the tetanic spasm are the position of opisthotonos and the facial expression known as <i>risus sardonius</i>. History of injury or apparent portal of entry may be lacking.</p> <p>Case definition and classification in neonates: Suspected case: Any neonatal death between 3 and 28 days of age in which the cause of death is unknown; or any neonate reported as having suffered from neonatal tetanus between 3 and 28 days of age and not investigated. Confirmed case: Any neonate with a normal ability to suck and cry during the first 2 days of life, who between 3 and 28 days of age cannot suck normally, or any neonate who becomes stiff or has spasms or both.</p> <p>Working case definition (draft) of adult tetanus Following an injury or wound, one or more of the following signs occurring after 3 - 21 days (range 1 day to several months; average 14 days). - Trismus of the facial muscles (masseter and neck)/<i>risus sardonius</i>. - Painful muscular contractions/spasms, often triggered by sensory stimuli.</p> <p>Laboratory diagnosis Attempts at laboratory diagnosis are often unsuccessful. The organism is rarely recovered from the site of infection, and usually there is no detectable antibody response. Diagnosis is purely clinical and does not depend upon laboratory or bacteriological confirmation. Hospital reported cases of neonatal tetanus are considered confirmed cases.</p>
Mode of transmission	<p><i>Clostridium tetani</i> spores are introduced into the body through a puncture wound contaminated with soil, street dust, human and animal feces. Such wounds result from lacerations, burns, trivial unnoticed wounds, injected contaminated street drugs and unsafe surgical procedures (umbilical cord dressing and circumcision procedures).</p> <p>Neonatal tetanus usually occurs when tetanus spores are introduced via the umbilical cord during delivery (e.g. through the use of unclean instruments), or after the delivery by dressing the umbilical stump with substances that are heavily contaminated (e.g. ritual dressings).</p>
Incubation	Average 10 days. Usually 3 - 21 days, although it may range from 1 day to several months depending on the character, extent and location of the wound.
Period of communicability	No person to person transmission.

EPIDEMIOLOGY

Burden	Number of total tetanus cases (including neonatal tetanus) reported in Indonesia:																															
	2003	175	1997	546																												
	2002	64	1996	815																												
	2001	82	1995	807																												
	2000	466	1990	1427																												
	1999	54	1980	954																												
	1998	63																														
	(Data source: WHO vaccine-preventable diseases monitoring system - 2004 global summary)																															
Geographical distribution	Worldwide.																															
Seasonality	Not applicable.																															
Alert threshold	One case of neonatal or adult tetanus.																															
Recent epidemics	<p>Not an epidemic prone disease.</p> <p>Situation in Aceh - January 2005: Following numerous injuries sustained by people during the Asia tsunami disaster 58 cases of tetanus were reported to WHO from Aceh province since December 31st 2004, including 39 from Banda Aceh, 15 from Meulaboh, 4 from Sigli. Among them 7 died (Case fatality proportion 12 %). Cases were admitted respectively in Kesdam hospital (11 cases), Fakinah hospital (5 cases), Zainoel Abidin hospital (23 cases).</p> <p>Distribution of cases reported in Aceh by age groups is as follows:</p> <table border="1"> <thead> <tr> <th>Age groups</th> <th>Male</th> <th>Female</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>< 15 years</td> <td>3</td> <td>0</td> <td>3</td> </tr> <tr> <td>15 – 30 years</td> <td>5</td> <td>2</td> <td>7</td> </tr> <tr> <td>31-45 years</td> <td>9</td> <td>1</td> <td>10</td> </tr> <tr> <td>4- - 60 years</td> <td>12</td> <td>5</td> <td>17</td> </tr> <tr> <td>Unknown</td> <td>2</td> <td></td> <td>2</td> </tr> <tr> <td>Total</td> <td>31</td> <td>8</td> <td>39</td> </tr> </tbody> </table> <p>(Data source: WHO/Indonesia - Banda ACEH, January 2005).</p> <p>Of the 39 cases 11 had superficial wound reported, 23 had deep wounds, for 5 information is missing.</p> <p>Tetanus was included in the hospital based disease surveillance system.</p>				Age groups	Male	Female	Total	< 15 years	3	0	3	15 – 30 years	5	2	7	31-45 years	9	1	10	4- - 60 years	12	5	17	Unknown	2		2	Total	31	8	39
Age groups	Male	Female	Total																													
< 15 years	3	0	3																													
15 – 30 years	5	2	7																													
31-45 years	9	1	10																													
4- - 60 years	12	5	17																													
Unknown	2		2																													
Total	31	8	39																													

RISK FACTORS FOR INCREASED BURDEN

Population movement	No																
Overcrowding	Yes	In displaced populations increases rates of accumulation of sharps and debris capable of inflicting wounds.															
Poor access to health services	Yes	Treatment outcomes are markedly influenced by the populations access to immunization, presence of experienced intensive care unit personnel and resources.															
Food shortages	No																
Lack of safe water and poor sanitation	No																
Others	Yes	<p>An increased number of cases may be observed following natural disasters, particularly among people not (or no longer) protected through immunization (e.g. adult males or elderly people).</p> <p>National TT2 coverage - no data available from 1978 to 2000</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Protection at birth (with TT vaccination)</th> <th>DPT3</th> </tr> </thead> <tbody> <tr> <td>2003</td> <td>51%</td> <td>70%</td> </tr> <tr> <td>2002</td> <td>51%</td> <td>70%</td> </tr> <tr> <td>2001</td> <td>51%</td> <td>76%</td> </tr> <tr> <td>2000</td> <td>51%</td> <td>75%</td> </tr> </tbody> </table> <p>(Data source: WHO/ vaccine preventable diseases monitoring system - 2004 global summary).</p>	Year	Protection at birth (with TT vaccination)	DPT3	2003	51%	70%	2002	51%	70%	2001	51%	76%	2000	51%	75%
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2003	51%	70%															
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2000	51%	75%															
Risk assessment conclusions		<p>Tetanus protection is provided through immunization. Both DTP (or DT) doses given in childhood and TT (or Td) given later in life provide protection. At least 2 doses are required to provide protection, and regular boosters are needed. It is therefore important to re-establish as soon as possible the routine immunization program (which in Indonesia targets children and adult women) to ensure on-going primary vaccination and provision of booster doses.</p> <p>A periodic increase in a number of cases may be observed in agricultural regions and in underdeveloped areas where contact with animal excreta is likely.</p>															

<p>Case management</p>	<p>The main stay for case management is supportive treatment with high sedation. Case fatality rates range from 10% to 90% and are highest in infants and the elderly. Treatment outcomes vary inversely with the length of the incubation period, and the availability of experienced intestive care unit personel and resources.</p> <p>Prophylaxis in Wound Management</p> <p>Passive immunization with at least 250 IU of Tetanus Immunoglobulin (TIG), regardless of the patient's age, is indicated for patient with other than clean, minor wounds and a history of no, unknown or fewer than 3 previous tetanus toxoid doses. When tetanus toxoid and TIG are given concurrently, separate syringes and separate sites must be used. TIG must be given intramuscularly only.</p> <p>Antibiotics may theoretically prevent the multiplication of <i>C. tetani</i> in the wound and thus reduce production of toxin, but this does not obviate the need for prompt treatment of the wound together with appropriate immunization.</p> <p>Guide to Tetanus Prophylaxis in Wound Management</p> <table border="1" data-bbox="592 735 1459 1207"> <thead> <tr> <th rowspan="3">History of Active Immunization</th> <th colspan="4">Type of Wound</th> </tr> <tr> <th colspan="2">Clear, minor wound</th> <th colspan="2">All other wound</th> </tr> <tr> <th>Tetanus vaccine or DT in case of children below 8 yr</th> <th>Tetanus Immuno globulin</th> <th>Tetanus vaccine or DT in case of children below 8 yr</th> <th>Tetanus Immunoglo bulin</th> </tr> </thead> <tbody> <tr> <td>Not immunized or less than 3 doses</td> <td>Yes</td> <td>No</td> <td>Yes</td> <td>Yes</td> </tr> <tr> <td rowspan="3">3 doses or more</td> <td><5year since last dose</td> <td>No</td> <td>No</td> <td>No</td> <td>No</td> </tr> <tr> <td>5 to 10 years since last dose</td> <td>No</td> <td>No</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>>10 years since last dose</td> <td>Yes</td> <td>No</td> <td>Yes</td> <td>Yes</td> </tr> </tbody> </table> <p>Also see: <i>Surgical Care in the District Hospital</i>; WHO publication, 2003. http://www.who.int/bct/Main_areas_of_work/DCT/documents/9241545755.pdf</p>	History of Active Immunization	Type of Wound				Clear, minor wound		All other wound		Tetanus vaccine or DT in case of children below 8 yr	Tetanus Immuno globulin	Tetanus vaccine or DT in case of children below 8 yr	Tetanus Immunoglo bulin	Not immunized or less than 3 doses	Yes	No	Yes	Yes	3 doses or more	<5year since last dose	No	No	No	No	5 to 10 years since last dose	No	No	Yes	No	>10 years since last dose	Yes	No	Yes	Yes
History of Active Immunization	Type of Wound																																		
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	5 to 10 years since last dose	No	No	Yes	No																														
	>10 years since last dose	Yes	No	Yes	Yes																														
	<p>The minimum routine prophylactic dose of Tetanus Immunoglobulin (TIG) for adults or children is 250 IU given slowly by deep intramuscular injection, using a large gauge (20) needle. The dose should be doubled if the wound is grossly contaminated or if more than 24 hours have elapsed between wounding and the seeking of medical attention.</p> <p>Therapy of clinically manifest tetanus.</p> <ol style="list-style-type: none"> 1. Give a single dose of 3,000 to 6,000 IU of TIG, IM. 2. Give Metronidazole 500mg QID (4x/day) IV or oral. (adjust dose for children). (Penicilline, Erytromycine, tetracyclines can also be used) 3. Give Diazepam 0.5 to 15 mg/kg/day. Some physicians give diazepam every 2 to 8 hours, while others give 5 to 10 mg at every spasm. 4. Wound debridement. 5. Let patient rest in a quiet room. 6. Active immunization with tetanus toxoid as soon as the patient's condition is stablized. 																																		

<p>Prevention and control</p>	<ul style="list-style-type: none"> • Educate the public on the necessity for complete immunization with tetanus toxoid, the hazard of puncture wounds and closed injuries. • Persons who have not completed a full primary series of tetanus toxoid require a dose of tetanus toxoid as soon as possible following infliction of the wound.
<p>Immunization</p>	<ul style="list-style-type: none"> • Ensure immunization of pregnant women at risk: women in whom the latest immunization against tetanus occurred more than 10 years ago and all cases where asepsis during delivery may be doubtful. • Institute and maintain routine immunization programmes. • Active protection should be maintained by administering booster doses of Td every 10 years. • <i>Vaccination precaution</i> • After administration of immunoglobulins, an interval of at least 3 months should be allowed before vaccination with parenteral live virus vaccines (e.g. mumps, measles, rubella and the relevant combination vaccines, as well as varicella vaccine).

17. TUBERCULOSIS

DESCRIPTION

Infectious agent	<p>Bacterium: <i>Mycobacterium tuberculosis</i>.</p> <p>The <i>M.tuberculosis</i> complex includes <i>M.tuberculosis</i> and <i>M. africanum</i>, primarily from humans, and <i>M. bovis</i>, primarily from cattle.</p>
Diagnosis in Adults	<p><u>Clinical description</u></p> <p>The most important symptoms in the selection of tuberculosis (TB) suspects in adults (aged older than 15 years) are:</p> <ul style="list-style-type: none"> – cough for more than 2 to 3 weeks with or without expectoration, and/or – haemoptysis and – significant weight loss. <p>Patients with TB may also have other symptoms (which are more common, but less suggestive) such as:</p> <ul style="list-style-type: none"> – chest pain – breathlessness – fever/night sweats – tiredness, and – loss of appetite. <p><u>Clinical case definition</u></p> <p>Tuberculosis suspect: Any person who presents with symptoms or signs suggestive of TB, in particular cough of long duration (more than 2 to 3 weeks)</p> <p>Case of tuberculosis: A patient in whom TB has been bacteriologically confirmed or diagnosed by a clinician.</p> <p>Note: Any person given treatment for TB should be recorded as a case. Incomplete "trial" tuberculosis treatment should not be given as a method for diagnosis.</p> <p>Definite case of tuberculosis: A patient with positive culture for the <i>M. tuberculosis</i> complex. or with two sputum smears positive for acid-fast bacilli (AFB) is also considered a "definite" case).</p> <p><u>Laboratory criteria for diagnosis</u></p> <p>Each TB suspect should have three sputum samples examined by light binocular microscopy for AFB.</p> <p>The chances of finding TB organisms are greater with three sputum samples than with one or two samples. Secretions build up in the airways overnight, so that an early-morning sputum sample is more likely to contain the TB organism than a sample taken later in the day. In practice, a suspect provides sputum samples in the following manner:</p>

	<p>Day 1 Sample 1 – Person suspected of TB provides an “on-the-spot” sample under supervision on presentation to the health facility. He or she is given a sputum container to take home for an early-morning sample the following day.</p> <p>Day 2 Sample 2 – Person suspected of TB brings an early-morning sputum sample collected just after waking up. Sample 3 – Person suspected of TB provides another “on-the-spot” sample.</p> <p>At least two sputum smears are positive Smears should be stained using the Ziehl–Nielsen method. Any TB suspect with two positive smears is a smear-positive TB patient, who must then be registered and started on anti-TB treatment.</p> <p>If only one initial sputum smear is positive Pulmonary X-ray should then be performed. A suggestive X-ray showing active pulmonary TB interpreted by an experienced medical officer may lead to a diagnosis of smear-positive TB. AFB microscopy may be repeated and, if at least one smear is again positive, the patient should be considered a smear-positive TB patient. In the absence of X-ray, one sputum smear with positive culture for <i>M. tuberculosis</i> is also classified as sputum-positive TB.</p> <p>If all three sputum smears are negative If the initial three smears are negative, but pulmonary TB is still suspected because of persistent symptoms, the suspect should be treated for acute respiratory infection with broad-spectrum antibiotics (e.g. amoxicillin or co-trimoxazole, but not rifampicin or any other anti-TB drug) for at least 1 week. If there is no improvement, sputum samples must be re-examined 2 weeks after the first sputum examination.</p> <p>Between 65–80% of all pulmonary TB cases are expected to be confirmed by positive sputum smear examination. X-ray lesions compatible with active TB should encourage further sputum examination if the three sputum smear examinations were negative. X-ray itself is not a diagnostic tool for pulmonary TB.</p> <p>In <i>some</i> circumstances, a compatible X-ray together with symptoms consistent with TB will lead to the diagnosis of pulmonary TB in smear-negative cases. Thus, if all three samples are again negative after the trial of antibiotics, either a compatible X-ray interpreted by an experienced physician or, in the absence of X-ray facilities, the experienced physician’s judgement alone will decide whether a patient is categorized as having TB (classed as smear-negative TB).</p> <p>Additional cases of TB may be found among close contacts of known smear-positive cases, either family members or persons sleeping in the same shelter. Symptomatic contacts should be screened using the procedures described above.</p>
	<p><u>TB in HIV-positive patients</u></p> <p>HIV-positive patients are more susceptible to TB infection, and HIV in a TB patient is a potent cause of progression of TB infection to disease. The principles of TB control are the same even when there are many HIV/TB patients. In HIV-infected patients, pulmonary TB is still the commonest form of TB. The clinical presentation of TB depends on the degree of immunosuppression.</p> <p>Early in HIV infection, when immunity is good, the signs of TB are similar to those in an individual without HIV infection. As HIV infection progresses and immunity declines, the risk of TB dissemination increases. TB meningitis, miliary TB and widespread TB lymphadenopathy occur.</p> <p>It is important to look systematically for signs or symptoms of TB in HIV-positive patients and to start treatment without delay based on clinical, bacteriological and, in some circumstances, radiological evidence.</p>

<p>Diagnosis in Children</p>	<p>TB in children is a general disease, which may affect any part of the body. Children rarely have smear-positive TB, so they are rarely infectious. In complex emergency situations with a large number of children, extrapulmonary forms of TB should be suspected, diagnosed and treated appropriately. This may often require referral to a hospital for X-ray and special examinations (e.g. lumbar puncture).</p> <p>In children with headache, change of temperament, recent squint or ocular muscle paralysis, or dyspnoea, meningitis should be suspected. TB is one cause of meningitis, although rare – meningococcal meningitis is more common in complex emergency settings. Definitive diagnosis requires hospital referral.</p> <p>Children with high fevers, dyspnoea, gastrointestinal symptoms, confusion (i.e. those with suspicion of acute miliary TB) must also be referred to hospital for assessment and diagnosis. Suspected bone and joint TB, or pleural effusions, also require referral.</p> <p>Commoner forms of extrapulmonary disease (e.g. cervical or auxiliary lymphadenitis, peritonitis with ascites) can be diagnosed and treated in a camp situation.</p> <p>The diagnosis of TB in children should be carefully considered in a child if there is:</p> <ul style="list-style-type: none"> – illness lasting for more than 10 days – history of close contact with a TB patient – poor response to antibiotic therapy – poor response to 1 month of nutritional rehabilitation – weight loss or abnormally slow growth – loss of energy, or – increasing irritability and drowsiness over a period of 2 weeks. <p>Nutritional support and rehabilitation should be given for at least 1 month to a child in whom TB is suspected.</p> <p>Note: <i>The considerations explained above for the diagnosis of TB in HIV-positive adults also apply in to children.</i></p>
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<p>Diagnostic criteria for classification of TB</p>	<p><u>Pulmonary tuberculosis (PTB)</u></p> <p>Pulmonary TB refers to disease involving the lung parenchyma. Tuberculous intrathoracic lymphadenopathy (mediastinal and/or hilar) or tuberculous pleural effusion, without radiographic abnormalities in the lungs, therefore constitutes a case of extrapulmonary TB. A patient with both pulmonary and extrapulmonary TB should be classified as a case of pulmonary TB.</p> <ul style="list-style-type: none"> • Smear-positive pulmonary TB <p>Either: A patient with at least two sputum specimens positive for AFB by microscopy;</p> <p>or: A patient with at least one sputum specimen positive for AFB by microscopy and radiographic abnormalities consistent with pulmonary TB;</p> <p>or: A patient with at least one sputum specimen positive for AFB by microscopy, which is culture-positive for <i>M. tuberculosis</i>.</p> <ul style="list-style-type: none"> • Smear-negative pulmonary TB <p>A case of PTB that does not meet the above definition for smear-positive TB. This group includes cases without smear result. This commonly occurs in children but is comparatively uncommon in adults.</p> <p>Diagnostic criteria for PTB (which is also used to diagnose sputum negative PTB) is based on the following criteria:</p> <ul style="list-style-type: none"> – at least three sputum specimens negative for AFB, and – no clinical response to a one-week course of broad-spectrum antibiotics, and – radiographic abnormalities consistent with active PTB, and – decision by a clinician to treat with a full course of anti-TB chemotherapy. <p>A patient whose initial sputum smears were negative and whose subsequent sputum culture result is positive is also considered to have smear-negative pulmonary TB.</p> <p><u>Extrapulmonary tuberculosis (EPTB)</u></p> <p>EPTB refers to TB of organs other than the lungs, e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, joints and bones, meninges. Diagnosis should be based on one culture-positive specimen, or on histological or strong clinical evidence consistent with active EPTB, followed by a decision by a clinician to treat with a full course of anti-TB chemotherapy.</p> <p>The case definition of an EPTB case with several sites affected depends on the site representing the most severe form of disease.</p> <p>Some cases will be easy to diagnose with peripheral lymphadenitis, swelling of cervical or axillary lymph nodes, chronic evolution and/or production of caseous discharge. Other cases, such as severe, life-threatening forms (e.g. miliary TB, TB meningitis), TB of bone joints, TB peritonitis, TB laryngitis, will be suspected but should be referred to a hospital for assessment.</p>
<p>Mode of transmission</p>	<p>Exposure to tubercle bacilli in airborne droplet nuclei produced by people with pulmonary or laryngeal TB during expiratory efforts such as coughing and sneezing. Extrapulmonary tuberculosis (other than laryngeal) is usually non-infectious.</p> <p>Bovine tuberculosis results from exposure to tuberculous cattle, usually by ingestion of unpasteurized milk or dairy products, and sometimes by airborne spread to farmers and animal handlers.</p>
<p>Progression to active disease</p>	<p>Progression to active disease can take weeks or years; latent infections may persist throughout life. The risk of TB occurrence is relatively high during the first year following TB infection, then progressively decreases.</p> <p>Without HIV infection, only 10% of infected people with normal immune systems will develop clinically evident TB at some point in life; 5% will have an early progression of the disease (primary tuberculosis); the remaining 5% will have a late progression of the disease (post-primary tuberculosis) after a period of initial</p>

Period of communicability	As long as viable tuberculosis bacilli are being discharged in the sputum. Effective treatment usually eliminates communicability within 2 weeks.
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EPIDEMIOLOGY

Burden	<p>INDONESIA - National indicators LATEST ESTIMATES^a Population 219 883 460 Global rank (by est. number of cases) 3 Incidence (all cases/100 000 pop/year) 285 Incidence (new ss+/100 000 pop/year) 128 Prevalence (all cases/100 000 pop) 675 TB mortality (all cases/100 000 pop/year) 65 TB cases HIV+ (adults 15–49y, %) 0.5 New cases multi-drug resistant (%) 0.7</p> <table> <thead> <tr> <th>TRENDS</th> <th>2000</th> <th>2001</th> <th>2002</th> <th>2003</th> </tr> </thead> <tbody> <tr> <td>DOTS coverage (%)</td> <td>98</td> <td>98</td> <td>98</td> <td>98</td> </tr> <tr> <td>Notification rate (all cases/100 000 pop)</td> <td>43</td> <td>43</td> <td>71</td> <td>81</td> </tr> <tr> <td>Notification rate (new ss+/100 000 pop)</td> <td>25</td> <td>25</td> <td>35</td> <td>42</td> </tr> <tr> <td>Detection of all cases (%)</td> <td>15</td> <td>15</td> <td>25</td> <td>28</td> </tr> <tr> <td>Case detection rate (new ss+, %) 20</td> <td>20</td> <td>27</td> <td>33</td> <td></td> </tr> <tr> <td>DOTS case detection rate (new ss+, %)</td> <td>20</td> <td>20</td> <td>27</td> <td>33</td> </tr> <tr> <td>DOTS case detection rate (new ss+)/coverage (%)</td> <td>20</td> <td>20</td> <td>28</td> <td>34</td> </tr> <tr> <td>DOTS treatment success (new ss+, %)</td> <td>87</td> <td>86</td> <td>86</td> <td>—</td> </tr> </tbody> </table>					TRENDS	2000	2001	2002	2003	DOTS coverage (%)	98	98	98	98	Notification rate (all cases/100 000 pop)	43	43	71	81	Notification rate (new ss+/100 000 pop)	25	25	35	42	Detection of all cases (%)	15	15	25	28	Case detection rate (new ss+, %) 20	20	27	33		DOTS case detection rate (new ss+, %)	20	20	27	33	DOTS case detection rate (new ss+)/coverage (%)	20	20	28	34	DOTS treatment success (new ss+, %)	87	86	86	—
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DOTS treatment success (new ss+, %)	87	86	86	—																																														
Geographical distribution	Tuberculosis is known to be widespread throughout the country although TB activities varies between province.																																																	
Seasonality	No specific seasonality is reported.																																																	
Alert threshold	Not applicable.																																																	
Recent epidemics in the country	Not applicable.																																																	

RISK FACTORS FOR INCREASED BURDEN

Population movement	Yes	May generate conditions that disrupt TB treatment.
Overcrowding	Yes	Overcrowding is recognized as one of the most important factors leading to increased risk of transmission.
Poor access to health services	Yes	<ul style="list-style-type: none"> - People affected by TB who cannot access health services and be treated remain infectious for a longer period. - The case-fatality rate is high (about 50%) without proper treatment.
Interruption of TB Drug Supply	Yes	Stocks may be wiped out, and temporarily unavailable. Together with poor drug prescribing practices, the interruption of treatment is one of the most important causes of development of multidrug-resistant TB (MDR-TB).
Food shortages	No	However, poor nutritional status increases vulnerability to TB infection and development of active disease due mainly to decreased immune response.
Lack of safe water and poor sanitation	No	
Other	No	

<p>Risk assessment conclusions</p>	<p>With a national case detection rate of 33%, many infectious TB patients are not currently being picked up by the health system. The impact of the disaster on health system infrastructure in the affected areas is significant, and TB control efforts will be affected.</p> <p>Of key concern is the potential for increasing cases of drug resistance as a result of interruption of drug supply and/or poor drug prescribing practices e.g. non-DOTS treatment regimens implemented outside NTP control. All TB control activity must be coordinated by the NTP to ensure national guidelines and protocols are being followed.</p> <p>The fact that many NTP staff were taken away from their regular duties as part of the Tsunami response can also cause interruption of TB control efforts in non-affected areas. Regular monitoring and supervision will no doubt be compromised and require special attention in the affected as well as non-affected areas.</p>
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PREVENTION AND CONTROL MEASURES

<p>Case management</p>	<p>Standardized short-course chemotherapy using regimens of 6–8 months.</p> <p>Good case management includes directly-observed therapy (DOT) during the intensive phase for all new sputum-smear positive cases, the continuation phase of rifampicin-containing regimens and the whole of the re-treatment regimen.</p> <p>There are three main types of regimens: Category I for new smear-positive (infectious) pulmonary cases, Category II for re-treatment cases and Category III for smear-negative pulmonary or extrapulmonary cases.</p> <p>The chemotherapeutic regimens are based on standardized combinations of 5 essential drugs: rifampicin (R), isoniazid (H), pyrazinamide (Z), ethambutol (E) and streptomycin (S).</p> <p>Each of the standardized chemotherapeutic regimens consists of two phases:</p> <ul style="list-style-type: none"> – Initial (intensive) phase: 2–3 months, with 3–5 drugs given daily under direct observation. – Continuation phase: 4–6 months, with 2–3 drugs given 3 times weekly under direct observation or, in some cases (e.g. during repatriation of displaced populations), 2 drugs for 6 months given daily, unsupervised, but in fixed-dose combinations. <p>Staff should observe all doses of rifampicin-containing regimens; actual swallowing of medication should be checked.</p> <p>Hospitalized patients should be kept in a separate ward for the first 2 weeks of treatment.</p> <p><u>Previously treated case</u></p> <p>A patient who has at any time received anti-TB treatment for more than 1 month. This group of patients comprises:</p> <ul style="list-style-type: none"> – Return after interruption: common among IDPs. – Failure: a patient who, while on treatment, remained, or became again, smear-positive, 5 months or later after starting treatment; also, a patient who was smear-negative before starting treatment and who became smear-positive after the second month of treatment. – Relapse: a patient who has been declared cured of TB in the past by a physician after a full course of chemotherapy and who has become again sputum smear-positive. – Chronic: a patient who remained, or became again, smear-positive at the end of a fully supervised, standardized re-treatment regimen (very small number of previously treated cases).
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<p>Treatment in Children</p>	<p>The drug regimens used for children are the same as for adults*</p> <p>Drug dosages must be calculated according to the child's weight. Adjustments may have to be made during the course of the treatment as the child may rapidly regain lost weight.</p> <p>For infants of newly diagnosed smear-positive mothers, breastfeeding should continue. The infant should not be separated from the mother. Transmission is likely to have already occurred, and the infant is at greater risk of dying from other causes if breastfeeding is stopped. If the infant is well, isoniazid prophylaxis should be given for 6 months and requires regular follow-up, for example one in every two months.</p> <p>See:</p> <p><i>Precautions for use of streptomycin and ethambutol in children.</i> Geneva, WHO, 2003. (WHO/CDS/TB 2003.313; page 64).</p>
<p>Treatment categories</p>	<p>Treatment categories are essential for prioritization of TB treatment according to public health risk – Category I is the highest priority.</p> <p>Category I These patients are:</p> <ul style="list-style-type: none"> – smear-positive persons who have never previously been treated or who have only received treatment for less than 1 month. – severely ill patients with other forms of TB (new smear-negative pulmonary TB, with extensive parenchymal involvement, and new cases of severe forms of TB¹). <p>The recommended regimen lasts 6 months. The initial (intensive) phase of treatment lasts for 2 months; rifampicin, isoniazid, pyrazinamide and ethambutol are given daily or 3 times weekly (streptomycin may be used as a substitute for ethambutol), under direct supervision.</p> <p>At the end of the second month of treatment, most patients will have a negative result on sputum microscopy; they can then progress to the second stage of treatment – the continuation phase. This phase lasts for 4 months, with rifampicin and isoniazid given 3 times weekly, under direct supervision.²</p> <p>If the sputum smear examination is positive at the end of the second month, for whatever reason, the initial phase is prolonged for a third month. The patient then starts the continuation phase irrespective of the results of the sputum examination at the end of the third month. If the sputum smears are still positive at the end of the fifth month or at the end of a treatment regimen, the patient is classified a treatment failure case. He or she is re-registered and starts a full course of the re-treatment regimen as a Category II patient.</p> <p>Drug dose is adjusted for weight gain at the end of the initial phase (2nd or 3rd month).</p> <p>¹This category includes patients with TB meningitis, disseminated TB, pericarditis, peritonitis, bilateral or extensive pleurisy, vertebral disease with neurological complications, and intestinal and genitourinary disease.</p> <p>²Daily self-administered ethambutol and isoniazid may be used in the continuation phase for 6 months, so this treatment regimen lasts a total of 8 months. However, this regimen is associated with a higher rate of failure and relapse.</p>

	<p><u>Category II</u> Patients who were previously treated and are now sputum smear-positive include:</p> <ul style="list-style-type: none"> – treatment after interruption; – treatment failure; and – relapse after treatment. <p>These patients should receive a standardized re-treatment regimen, fully supervised throughout both phases of treatment.</p> <p>The initial phase of treatment lasts for 3 months; rifampicin, isoniazid, pyrazinamide and ethambutol are given daily and supplemented by streptomycin daily for the first 2 months.</p> <p>The continuation phase of this regimen constitutes 5 months of rifampicin, isoniazid and ethambutol given 3 times weekly.</p> <p>Sputum smear examination is performed at the end of the initial phase of treatment (i.e. at the end of 3 months), during the continuation phase of treatment (at the end of the fifth month) and at the end of treatment (at the end of the eighth month). If the patient is sputum smear-positive at the end of the third month, the initial phase of treatment is extended with rifampicin, isoniazid, pyrazinamide and ethambutol for one more month. Patients who are still positive at the end of the fourth month progress to the continuation phase, regardless of the results of the sputum examination.</p> <p><u>Category III</u></p> <p>These patients include:</p> <ul style="list-style-type: none"> – smear-negative pulmonary patients (with limited parenchymal involvement) – adults and children with non-serious extrapulmonary disease (including symptomatic primary disease). <p>All Category III patients should receive 2 months of rifampicin, isoniazid and pyrazinamide daily, followed by 4 months of isoniazid and rifampicin every second day.</p> <p>When the continuation phase cannot be carried out under direct observation, all patients should be given daily ethambutol and isoniazid in the continuation phase for 6 months.</p> <p><u>HIV-positive patients</u></p> <p>Anti-TB drug treatment is the same for HIV-positive and HIV-negative patients, with one exception: <u>thiacetazone should not be given to HIV-positive TB patients</u> as there is increased risk of severe toxicity and sometimes fatal skin reactions.</p> <p>Controlled clinical trial studies have shown that isoniazid preventive treatment (IPT) reduces the risk of TB disease in HIV-positive individuals with latent TB infection (shown by a positive tuberculin skin test).</p> <p>The use of IPT has shown to be more effective than other regimens for prevention of latent TB infection. The decision to use IPT must be carefully evaluated, and requires first the exclusion of active TB in the patient.</p> <p>To manage the problem of HIV/TB coinfection effectively, TB and HIV programmes should coordinate activities through a TB/HIV coordinating body.</p> <p>See:</p> <ul style="list-style-type: none"> – <i>An expanded DOTS framework for effective tuberculosis control</i>. Geneva, WHO, 2002 (WHO/CDS/TB/2002.297). – <i>Treatment of tuberculosis: guidelines for national programmes</i>, 3rd ed. Geneva, WHO, 2003 (WHO/TB/2003.313). – <i>Tuberculosis control in refugee situations: an inter-agency field manual</i>. Geneva, WHO, 1997 (WHO/TB/97.221; to be updated in 2005).
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<p>Prevention and control</p>	<p>Detection and treatment of smear-positive (infectious) TB cases is the most effective preventive measure.</p> <p>To ensure the appropriate treatment and cure of TB patients, strict implementation of the DOTS strategy is important. DOTS is the internationally recommended strategy for TB control, and has the following components:</p> <ul style="list-style-type: none"> – Government commitment to ensuring sustained, comprehensive TB control activities. – Case detection by sputum smear microscopy among symptomatic patients self-reporting to health services. – Standardized short-course chemotherapy using regimens of 6–8 months, with direct observation of treatment at least during the intensive phase (or for as long as rifampicin is administered) for at least all confirmed smear-positive cases (see <i>Case management</i>). – A regular, uninterrupted supply of all essential anti-TB drugs. – A standardized recording and reporting system that allows assessment of follow-up and treatment results for each patient and of the TB control programme's overall performance. <p>Complementary control strategies:</p> <ul style="list-style-type: none"> – Health education to improve awareness and reduce stigma. – Maintaining good ventilation and reducing overcrowding in health clinics, and ensuring hospitalized patients are kept in a separate ward for the first 2 weeks of treatment. – Isoniazid prophylaxis is not recommended in refugee situations, except for children being breastfed by smear-positive mothers. If the child is well, BCG vaccination should be postponed and isoniazid given to the child for 6 months. In the event of a sudden disruption to the programme, isoniazid may be stopped and BCG given before the child leaves the refugee camp (preferably after a one-week interval).
<p>Immunization</p>	<p>BCG has been shown to be effective in preventing severe forms of TB such as TB meningitis and miliary TB in children. As overcrowding and malnutrition are common among many refugee and displaced populations, the risk of TB transmission to children is increased.</p> <p>BCG is strongly recommended for all newborn children and any children aged up to 5 years who have not already received it. The vaccination of newborns should be incorporated into routine immunization programmes for all children. Re-vaccination is not recommended.</p>

Health education	<p>Key elements of community education:</p> <ul style="list-style-type: none">– avoiding stigmatization of TB patients.– curability of TB disease.– early (self) referral of TB suspects.– importance of adherence to treatment.– contact tracing. <p>The most important messages to teach:</p> <ul style="list-style-type: none">• TB in an adult should be suspected when the person has a productive cough lasting more than 2 weeks, and/or blood in the sputum, with significant weight loss.• Cover the mouth whenever coughing or sneezing to prevent the spread of lung diseases.• Anyone may contract TB.• TB is curable.• Early treatment is important for best results and to prevent spread, especially to family members.• Children are especially at risk if not treated and may develop severe, even fatal, disease.• Good treatment is the best prevention.• All patients must take the full course of treatment.• Treatment makes patients non-infectious in 2 weeks, but cure takes 6–8 months.• Treatment must be completed even though the patient may feel better sooner.• Failure to complete the treatment may result in a recurrence that may be impossible to treat and may spread serious disease to others, especially children.• All patients should be treated sympathetically and with respect.• Controlling TB is a community responsibility. <p><i>Note: Diagrams should be used as much as possible – a high literacy level should not be assumed. Cured patients are often helpful teachers and supporters of new patients.</i></p>
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18. TYPHOID FEVER

DESCRIPTION

Infectious agent	Bacterium: <i>Salmonella enterica</i> serovar Typhi (S.Typhi).
Case definition	<p>Clinical case definition Clinical diagnosis is difficult. In the absence of laboratory confirmation, any case with fever of at least 38 °C for 3 or more days is considered suspect if the epidemiological context is conducive.</p> <p>Confirmed case Isolation of S.Typhi from blood or stool cultures.</p>
Mode of transmission	Faecal–oral route, particularly through contaminated water and food.
Incubation	Incubation period is usually 8–14 days but may be from 3 days up to 1 month.
Period of communicability	From the symptomatic period for 2 weeks; 2–5% of infected cases remain carriers for several months. Chronic carriers contribute significantly to spread of the disease.

EPIDEMIOLOGY

Burden	Cases of Typhoid fever reported from Aceh 2000 - 2002.								
	2000			2001			2002		
	<5	≥5	Deaths	<5	≥5	Deaths	<5	≥5	Deaths
	643	3569	0	852	7983	0	654	4172	0
	Data source: MOH/Indonesia, 2002.								
Geographical distribution	No data available.								
Seasonality	No data available.								
Alert threshold	Two or more linked cases.								
Recent epidemics in the country	No data available.								

RISK FACTORS FOR INCREASED BURDEN

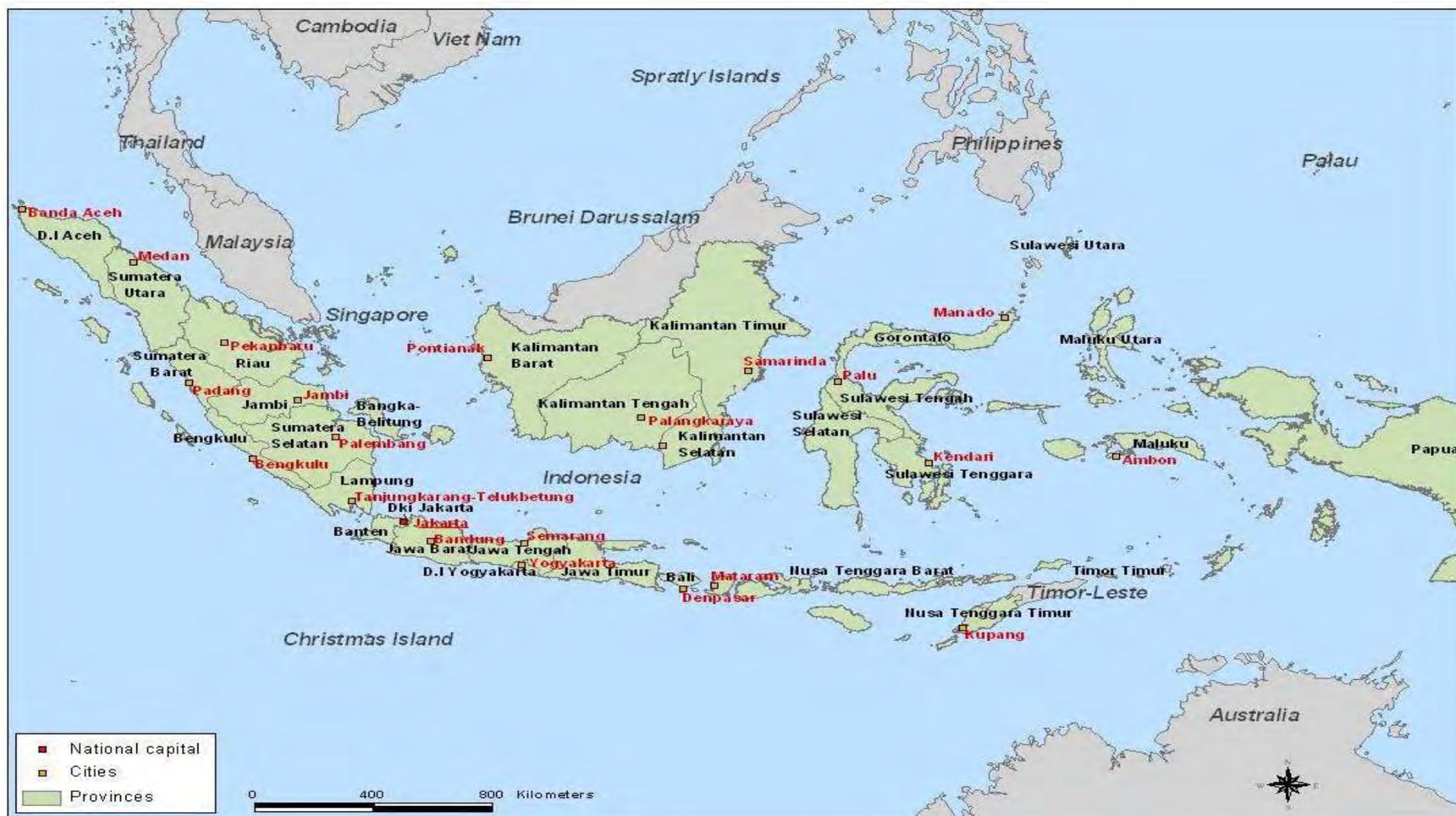
Population movement	Yes	Dissemination of multidrug-resistant strains of S. Typhi.
Overcrowding	Yes	Very important.
Poor access to health services	Yes	Early detection and containment of cases are paramount in reducing dissemination. The case-fatality rate is high (10–20%) without proper treatment.
Food shortages	No	
Lack of safe water and poor sanitation	Yes	The most important risk factor.
Others	Yes	Multidrug-resistant strains of S. Typhi, including resistance to ciprofloxacin. Milk and dairy products are an important source of infection.
Risk assessment conclusions		Overcrowding, lack of safe water, and inadequate sanitation increase the risk of infection. The risk of epidemics of typhoid fever is high in camp settings. Early detection of cases, containment and institution of appropriate antibiotic therapy is essential in reducing dissemination.

PREVENTION AND CONTROL MEASURES

Case management	<p>Early antimicrobial treatment, selected according to the antimicrobial resistance pattern of the strain.</p> <p>Quinolones (e.g. ciprofloxacin), co-trimoxazole, chloramphenicol and ampicillin are usually used for typhoid fever.</p> <p>Dehydration prevention and case management using ORS also play an important role.</p> <p>Treatment of uncomplicated typhoid fever</p>						
		Optimal therapy			Alternative effective drugs		
	Susceptibility	Antibiotic	Daily dosage (mg/kg)	Days	Antibiotic	Daily dosage (mg/kg)	Days
	Fully sensitive	Fluroquinolone e.g. ciprofloxacin or ofloxacin	15	5-7*	Chloramphenicol Amoxicillin TMP-SMX	50-70 75-100 8-40	14-21 14 14
	Multidrug resistance	Fluroquinolone	15	5-7	Azithromycin	8-10	7
		Or cefixime	15-20	7-14	Cefixime	15-20	7-14
	Quinolone** resistance	Azithromycin	8-10	7	Cefixime	20	7-14
		or Ceftriaxone	75	10-14			
	<p>* Three day courses are also effective and are particularly so in epidemic containment.</p> <p>**The optimum treatment for quinolone-resistant typhoid fever has not been determined. Azithromycin, the third generation cephalosporins, or a 10-14day course of high-dose fluroquinolones, is effective. Combinations of these are now being evaluated.</p>						
	Treatment of severe typhoid fever						
	Optimal therapy			Alternative effective drugs			
Susceptibility	Antibiotic	Daily dosage (mg/kg)	Days	Antibiotic	Daily dosage (mg/kg)	Days	
Fully sensitive	Fluroquinolone e.g. ofloxacin	15	10-14	Chloramphenicol Amoxicillin TMP-SMX	100 100 8-40	14-21 14 14	
Multidrug resistance	Fluroquinolone	15	10-14	Ceftriaxone or cefotaxime	60 80	10-14	
Quinolone** resistance	Azithromycin	8-10	7	Fluroquinolone	20	7-14	
	or Ceftriaxone	75	10-14				
Epidemic control	<p>Inform the health authorities when one or more suspected cases are identified.</p> <p>Confirm the outbreak in accordance with WHO guidelines.</p> <p>Confirm the diagnosis and ensure prompt treatment.</p>						

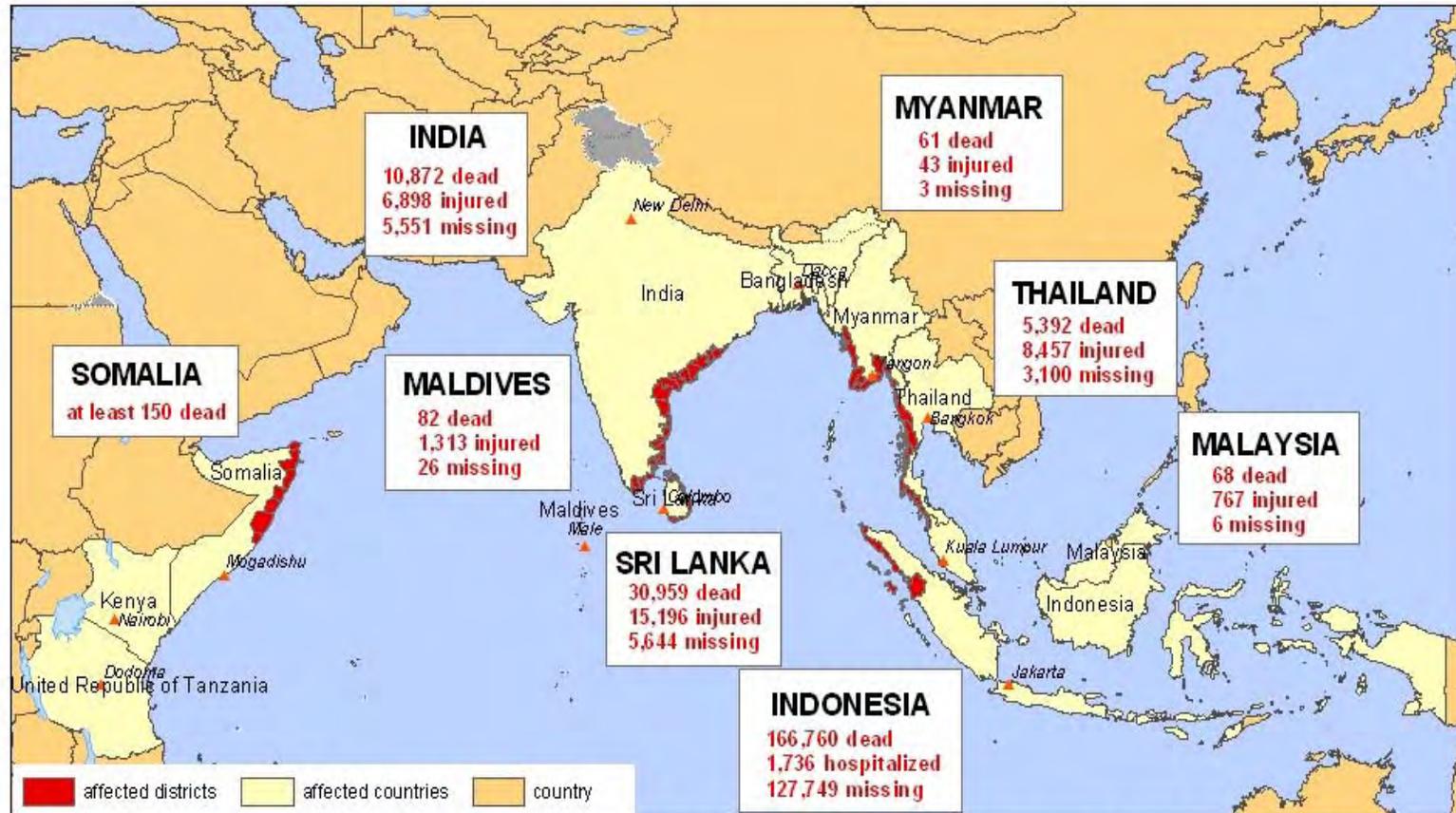
<p>Prevention</p>	<p>Good sanitation can markedly reduce the risk of transmission, especially where its absence may lead to contamination of clean water sources. High priority should be given to observing the basic principles of sanitary human waste disposal as well as to ensuring the availability of safe water supplies.</p> <p>Appropriate facilities for human waste disposal are a basic need of all communities. The absence of such facilities creates a high risk for disease transmission. Sanitary systems that are appropriate for local conditions should be constructed with the cooperation of the community.</p> <p>People will need to be taught how to use latrines, about the dangers of defecating on the ground, or in or near waters, and about the importance of thorough hand-washing with soap or ash after any contact with excreta. The disposal of children's excreta in latrines needs to be emphasized.</p>
<p>Immunization</p>	<p>Mass immunization may be an adjunct for the control of typhoid fever during a sustained, high-incidence epidemic. This is especially true when access to well functioning medical services is not possible or in the case of a multidrug-resistant strain.</p> <p>In addition to priority control measures such as provision of safe water and proper sanitation , vaccination of high risk populations is considered a most promising strategy for prevention and control of typhoid fever. A single dose parenteral vaccine based on purified Vi polysaccharide of <i>S. Typhi</i> is the vaccine of choice among displaced populations. An oral, live vaccine using <i>S. Typhi</i> strain Ty21a (for which a booster dose is recommended every 3 years) is also available.</p> <p>Neither the polysaccharide vaccine nor the Ty21a vaccine is licensed for children aged under 2 years. The Ty21a vaccine should not be used in patients receiving antibiotics.</p> <p>None of these vaccines confers protection against paratyphoid fever.</p> <p><u>See:</u> Joint WHO-UNICEF statement for Typhoid vaccine use in tsunami affected areas. http://www.who.int/cholera/tsunami_typhoidvaccine/en/index.html</p>

APPENDIX 1: MAP OF INDONESIA



APPENDIX 2: SITUATION MAP OF TSUNAMI AFFECTED AREAS - deaths, injuries and missing.

South Asia earthquake and tsunami: situation map as of 29 January 2005



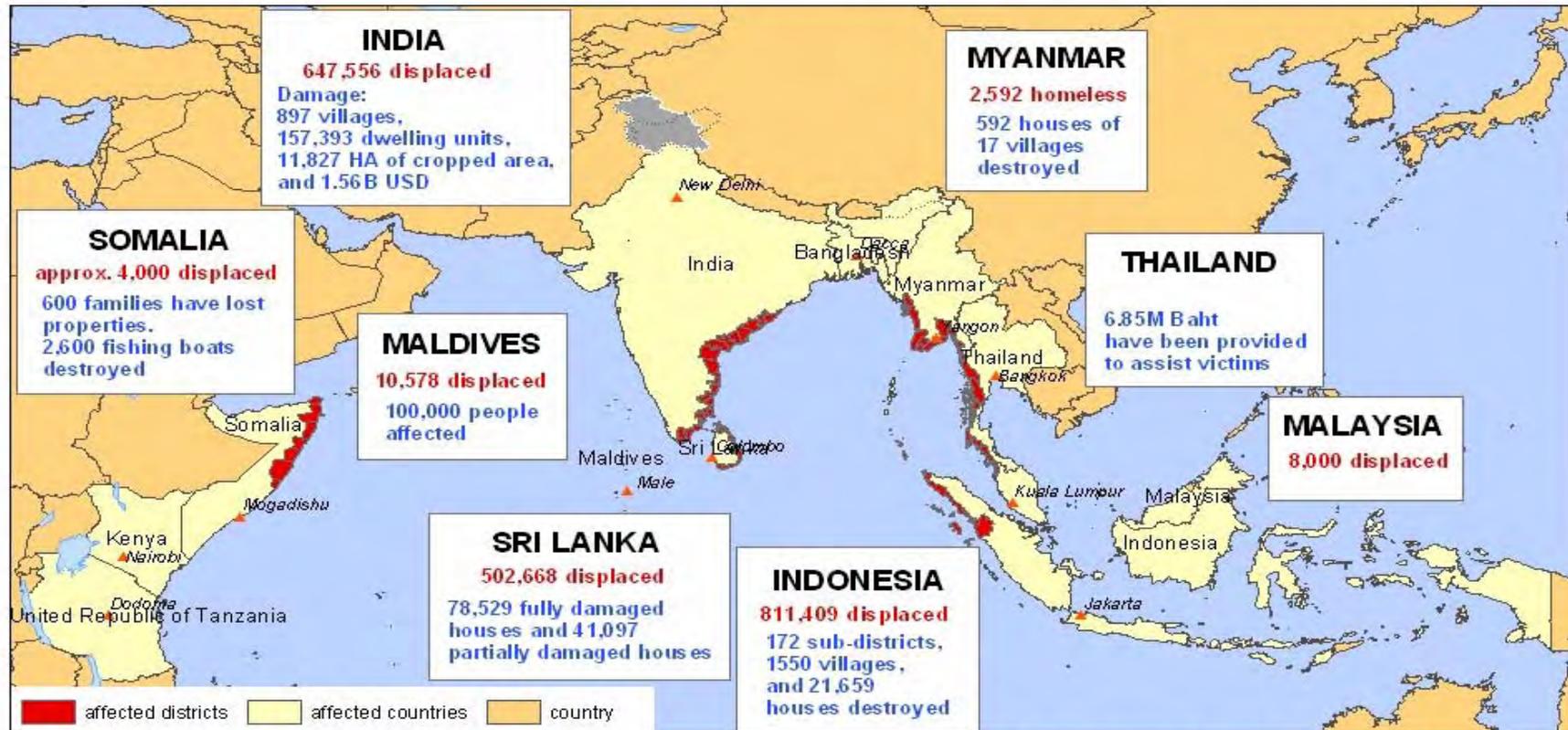
The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO Tsunami Task Force
 Map Production: Public Health Mapping & GIS
 Communicable Diseases (CDS)
 World Health Organization

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APPENDIX 3: SITUATION MAP OF TSUNAMI AFFECTED AREAS - destruction and population displacement.

South Asia earthquake and tsunami: situation map as of 29 January 2005

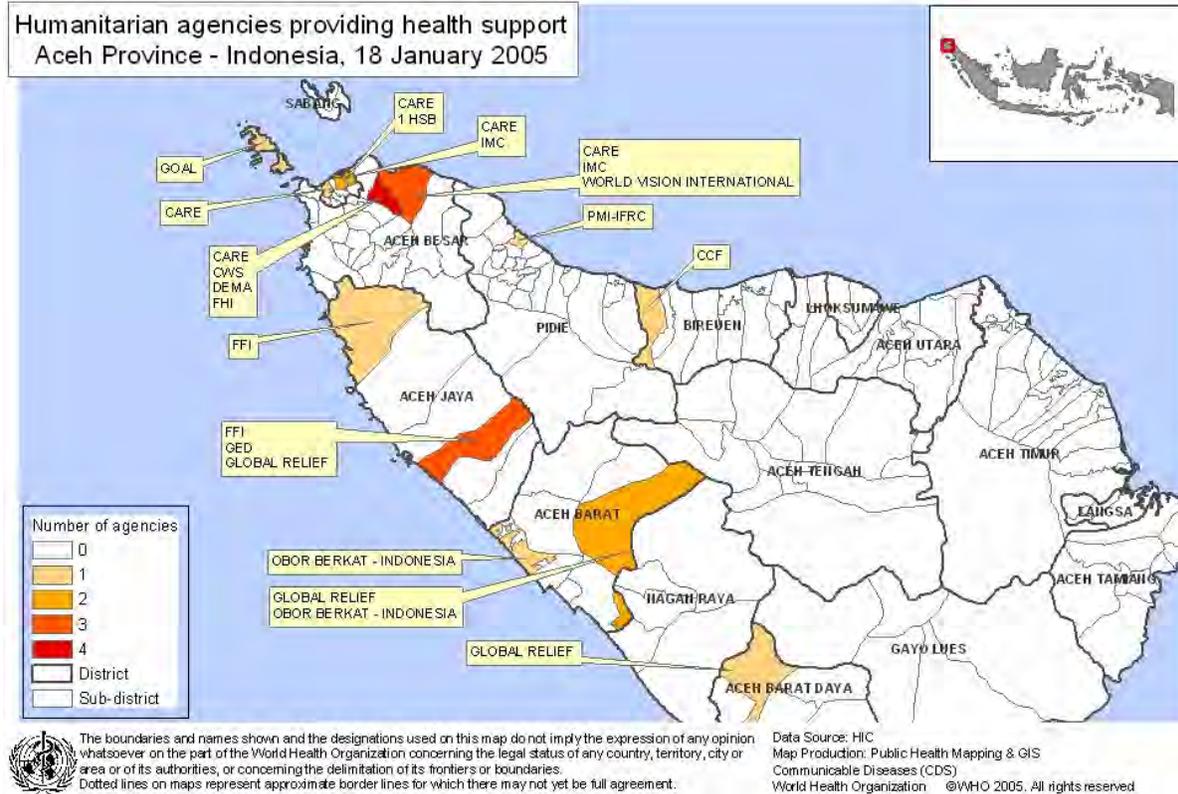


The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: WHO Tsunami Task Force
 Map Production: Public Health Mapping & GIS
 Communicable Diseases (CDS)
 World Health Organization

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APPENDIX 5: MAP OF HEALTHCARE AGENCIES PROVIDING SERVICES IN ACEH.



APPENDIX 6: WHO/MOH OUTPATIENT WEEKLY SURVEILLANCE REPORTING FORM.

**A. Outpatient WEEKLY Surveillance Reporting Form
Morbidity (disease) and Mortality (death)
Bring to HIC at Provincial MOH or to WHO Office every Monday**

Aceh Province District: _____ Sub district: _____
 Town/Village/Settlement/Camp:

Population size < 5 years >= 5 years

Type of Health Facility: Fixed,
 Mobile with fixed catchments
 Mobile with varying catchments

Supporting agency:

Name and telephone number of reporting officer:

Week from Monday: ____ / ____ /2005 to Sunday ____ / ____ /2005

	Report the number of CASES	MORBIDITY (cases)		MORTALITY (deaths)	
		<5 years	≥5 years	<5 years	≥5 years
A	TOTAL CONSULTATIONS				
B	TOTAL DEATHS				
C	Pregnancy related death				
D	Neonatal deaths (<28 days)				
E	Acute watery diarrhoea				
F	Bloody diarrhoea				
G	Malaria conf by rapid test				
H	Other Fever >38.5°				
J	Suspected Measles				
K	Acute respiratory infection				
L	Acute jaundice syndrome				
M	Meningitis				

- Write 0 (zero) if you had no case or death during the week for one of the syndrome listed in the form.
- Deaths might have occurred in the health facility or might have been reported from the community.
- Be careful to report only the deaths that occurred during the week.
- Deaths should be reported only in the mortality section, NOT in the morbidity section.

Case definitions for surveillance are presented below.

B. OUTBREAK ALERT

At any time **you suspect** any of the following diseases, you should alert the Surveillance Coordination by sending an SMS or phone to **0813 1716 7865 (Indonesian)** or **0813 1949 6754 (English)**, with maximum information on time, place and number of cases and deaths.

Acute watery diarrhoea / Cholera
Typhoid Tetanus

Bloody diarrhoea
Hepatitis

Measles
Dengue fever

Increase in malaria
Meningitis

GENERAL OBSERVATION (e.g. water, sanitation)

APPENDIX 7: WHO RECOMMENDED CASE DEFINITIONS

ACUTE WATERY DIARRHOEA

Three or more abnormally loose or fluid stools in the past 24 hours with or without dehydration.

To suspect a case of cholera:

Person aged over 5 years with severe dehydration or death from acute watery diarrhoea with or without vomiting.

Person aged over 2 years with acute watery diarrhoea *in an area where there is a cholera outbreak*.

To confirm a case of cholera:

Isolation of *Vibrio cholera* O1 or O139 from diarrhoeal stool sample.

ACUTE JAUNDICE SYNDROME

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

ACUTE LOWER RESPIRATORY TRACT INFECTION / PNEUMONIA IN CHILDREN <5 YEARS

Cough or difficult breathing.

and

Breathing 50 or more times per minute for infants aged 2 months to 1 year.

Breathing 40 or more times per minute for children aged 1 to 5 years.

and

No chest indrawing, no stridor, no general danger signs.

Note: Severe pneumonia = Cough or difficult breathing + any general danger sign (unable to drink or breast feed, vomits everything, convulsions, lethargic or unconscious) or chest indrawing or stridor in a calm child.

BLOODY DIARRHOEA

Acute diarrhoea with visible blood in the stool

To confirm case of epidemic bacillary dysentery:

Take stool specimen for culture and blood for serology. Isolation of *Shigella dysenteriae*.

MALARIA - confirmed case.

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

MEASLES

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

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

To confirm case:

Presence of measles-specific IgM antibodies.

MENINGITIS

Suspected case:

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

In patients under one year of age, a suspected case of meningitis occurs when fever is accompanied by a bulging fontanelle.

Probable of bacterial meningitis:

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

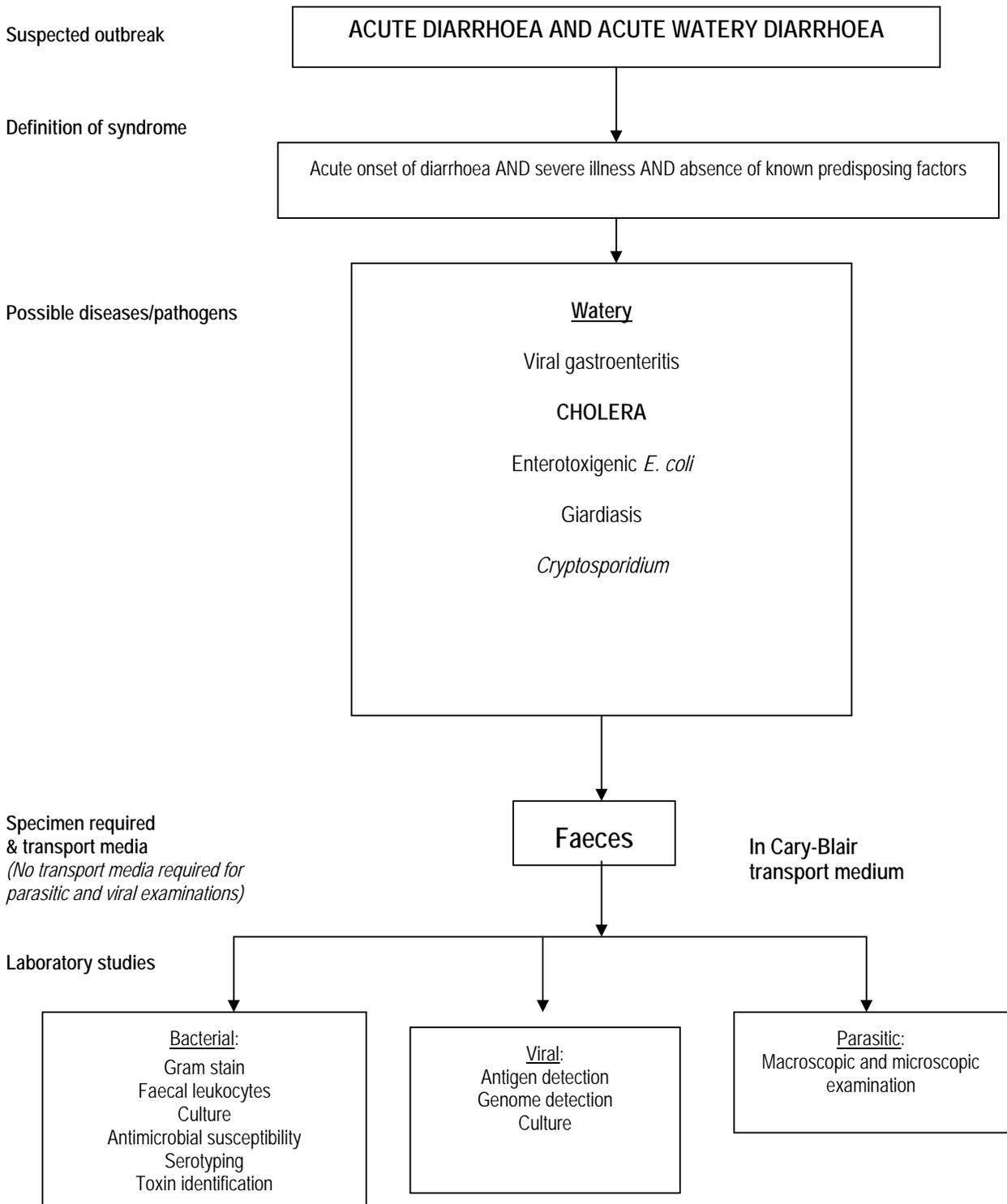
Probable case of meningococcal meningitis:

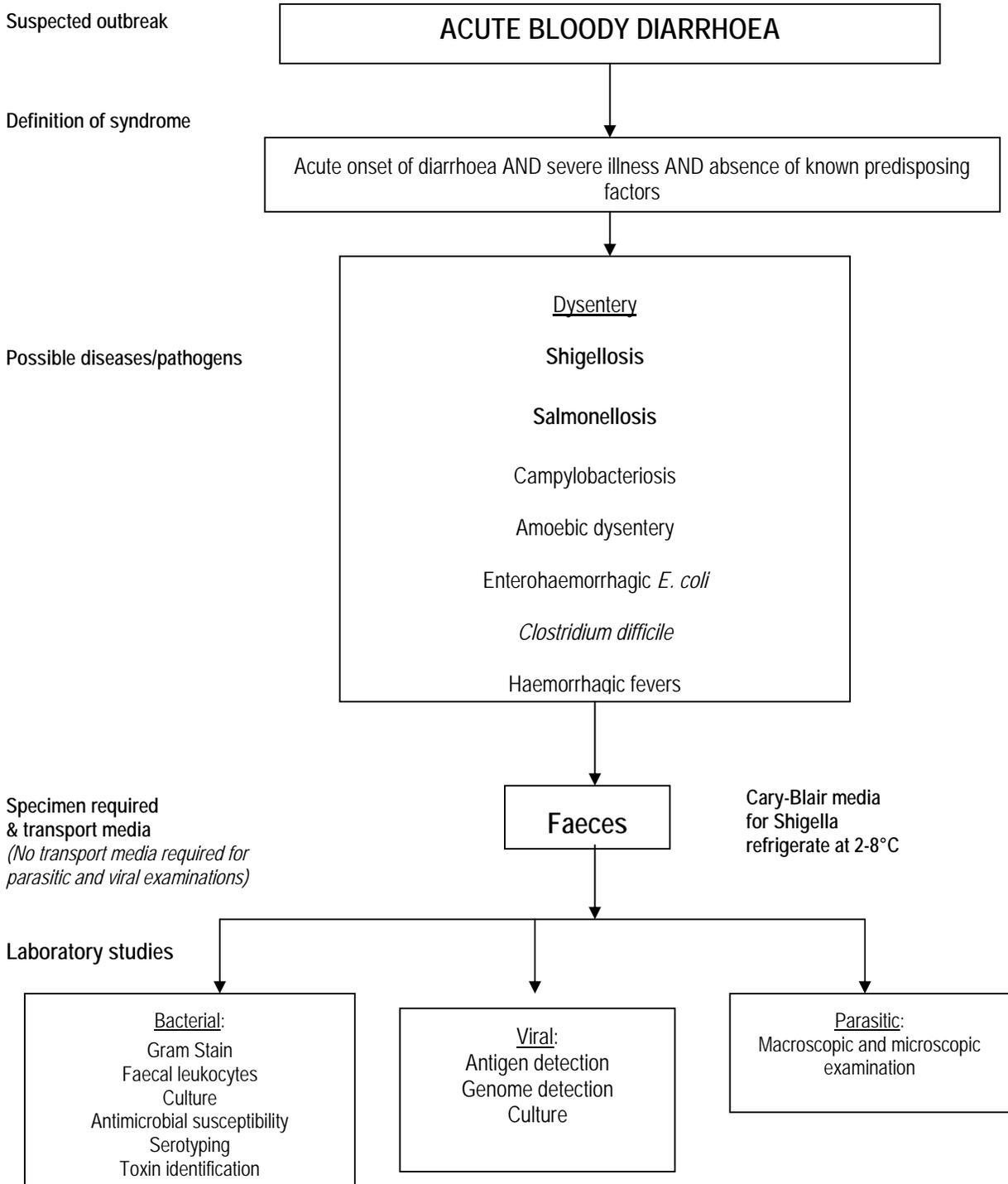
Suspected case of meningitis as defined above with gram stain showing gram negative diplococcus or ongoing epidemic or petechial or purpura rash

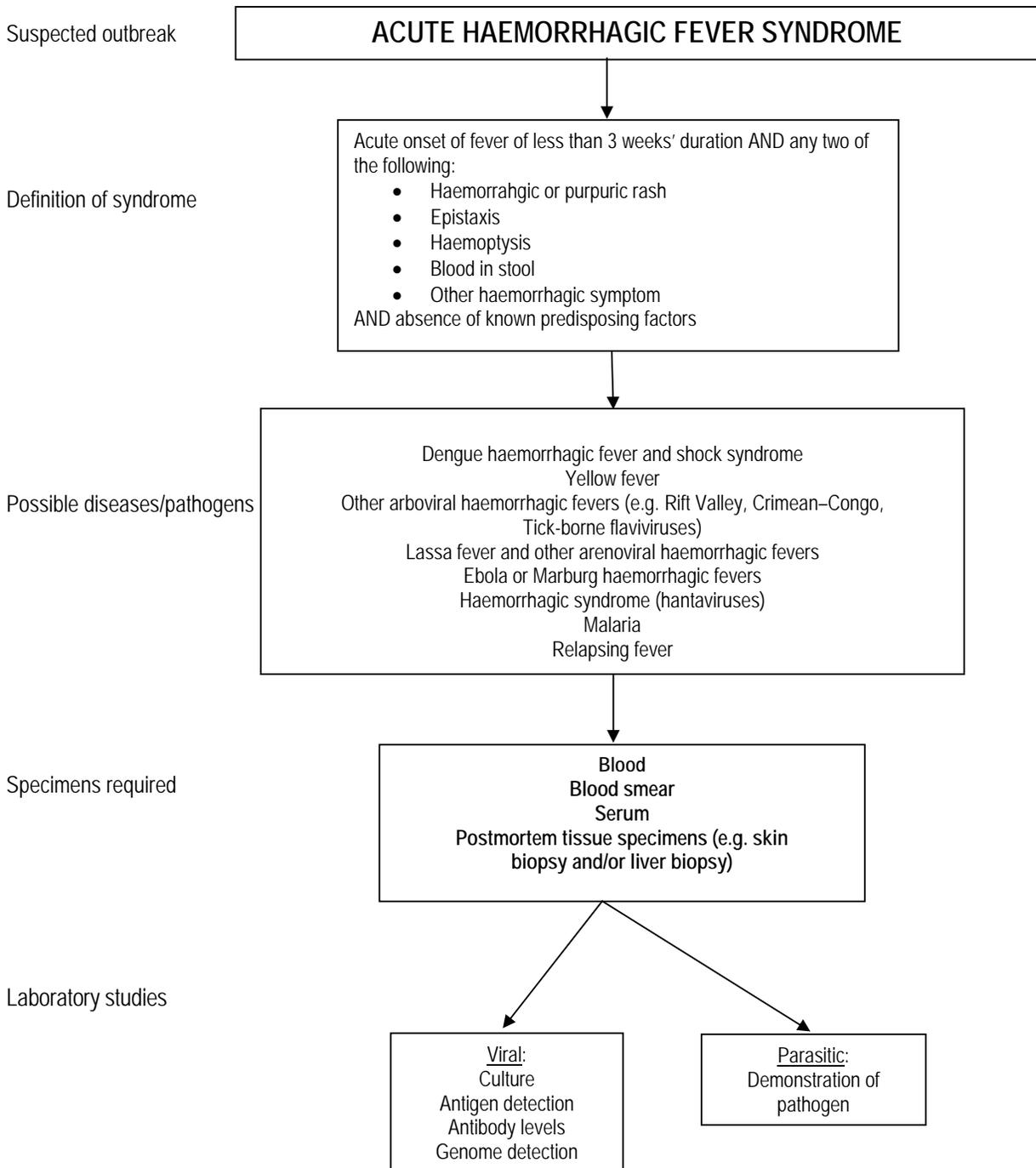
Confirmed case:

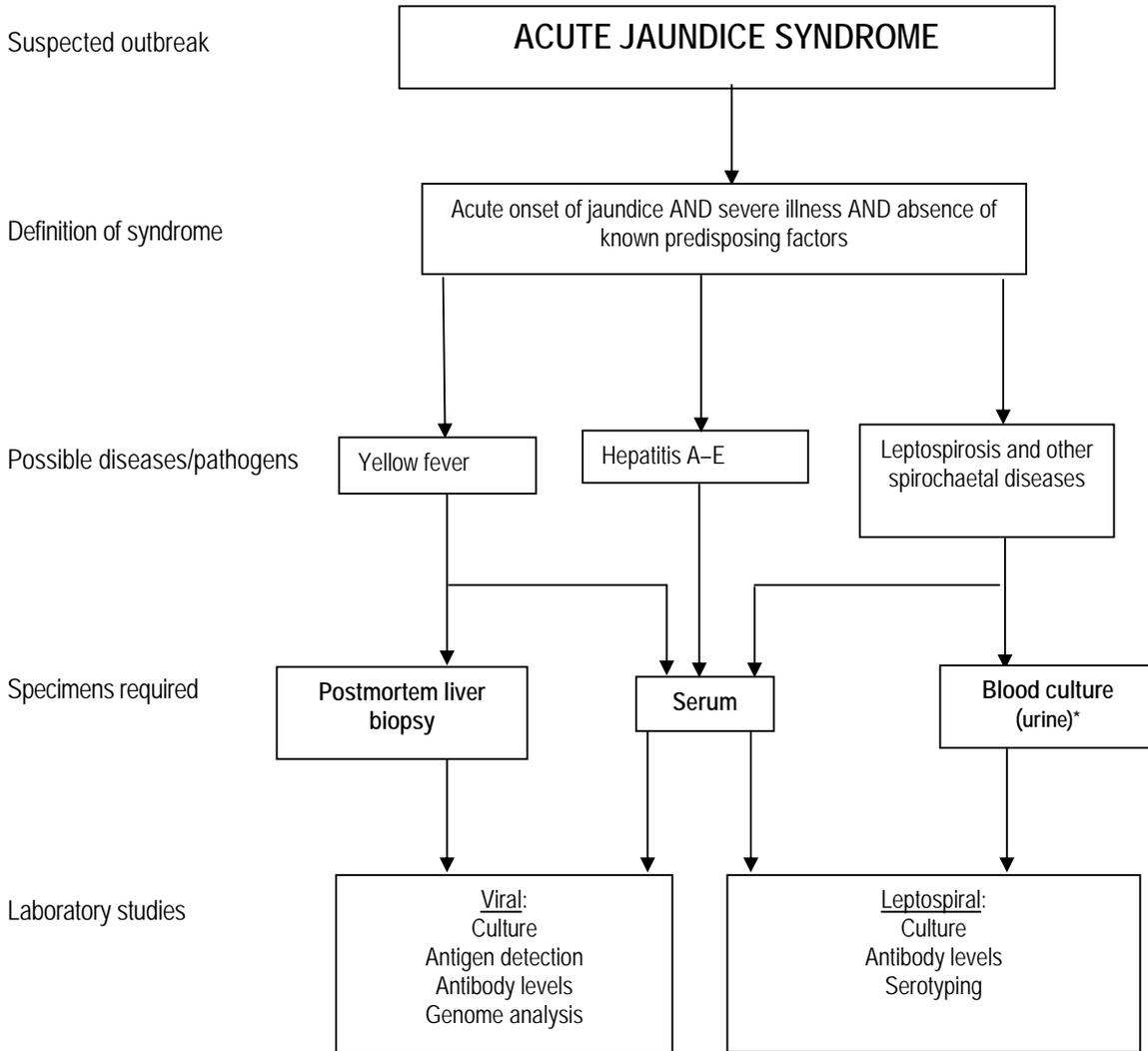
Suspected or probable case as defined above with either positive CSF antigen detection for N.meningitidis or positive culture of CSF or blood with identification of N. meningitidis.

APPENDIX 8: FLOWCHARTS FOR THE LABORATORY CONFIRMATION OF COMMUNICABLE DISEASES

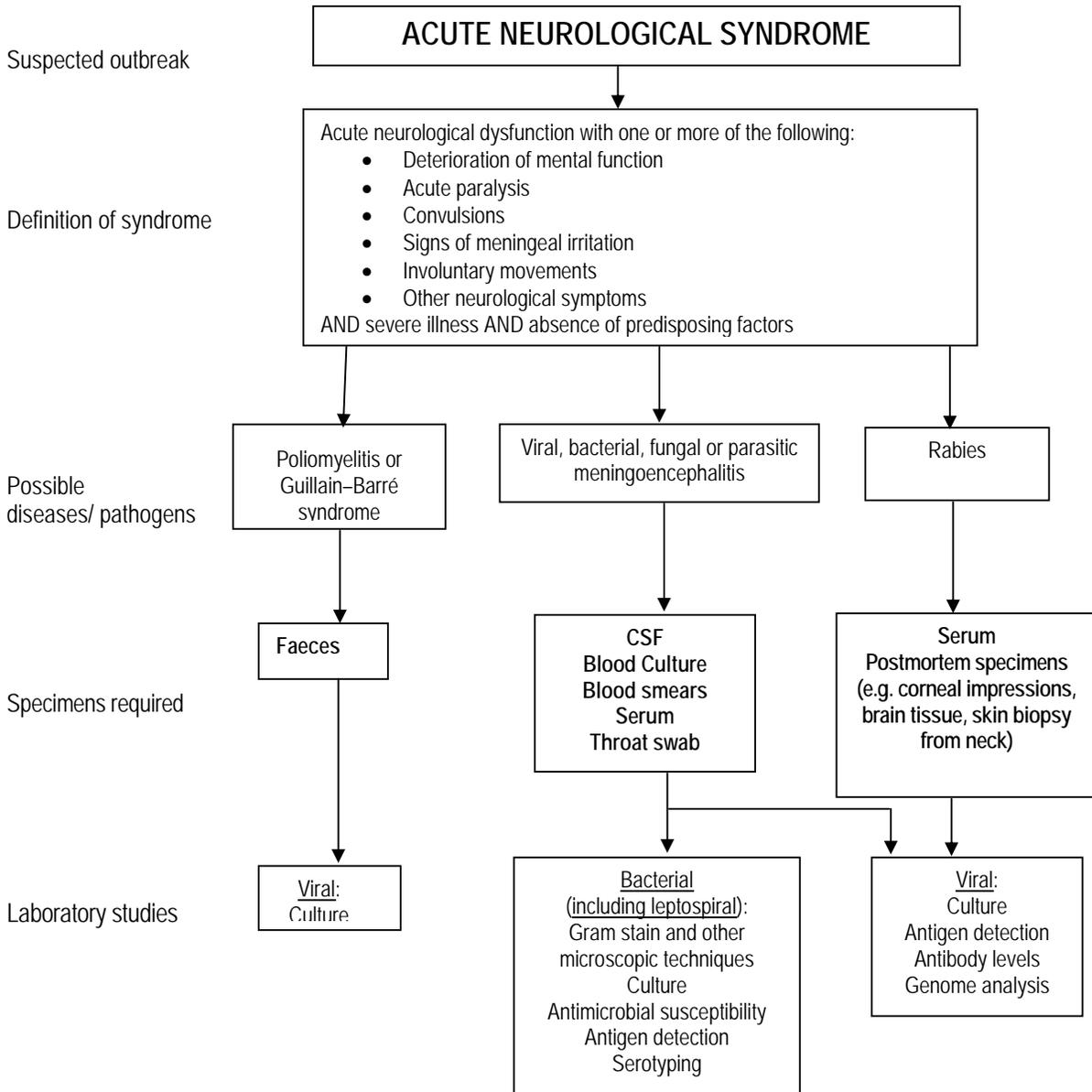


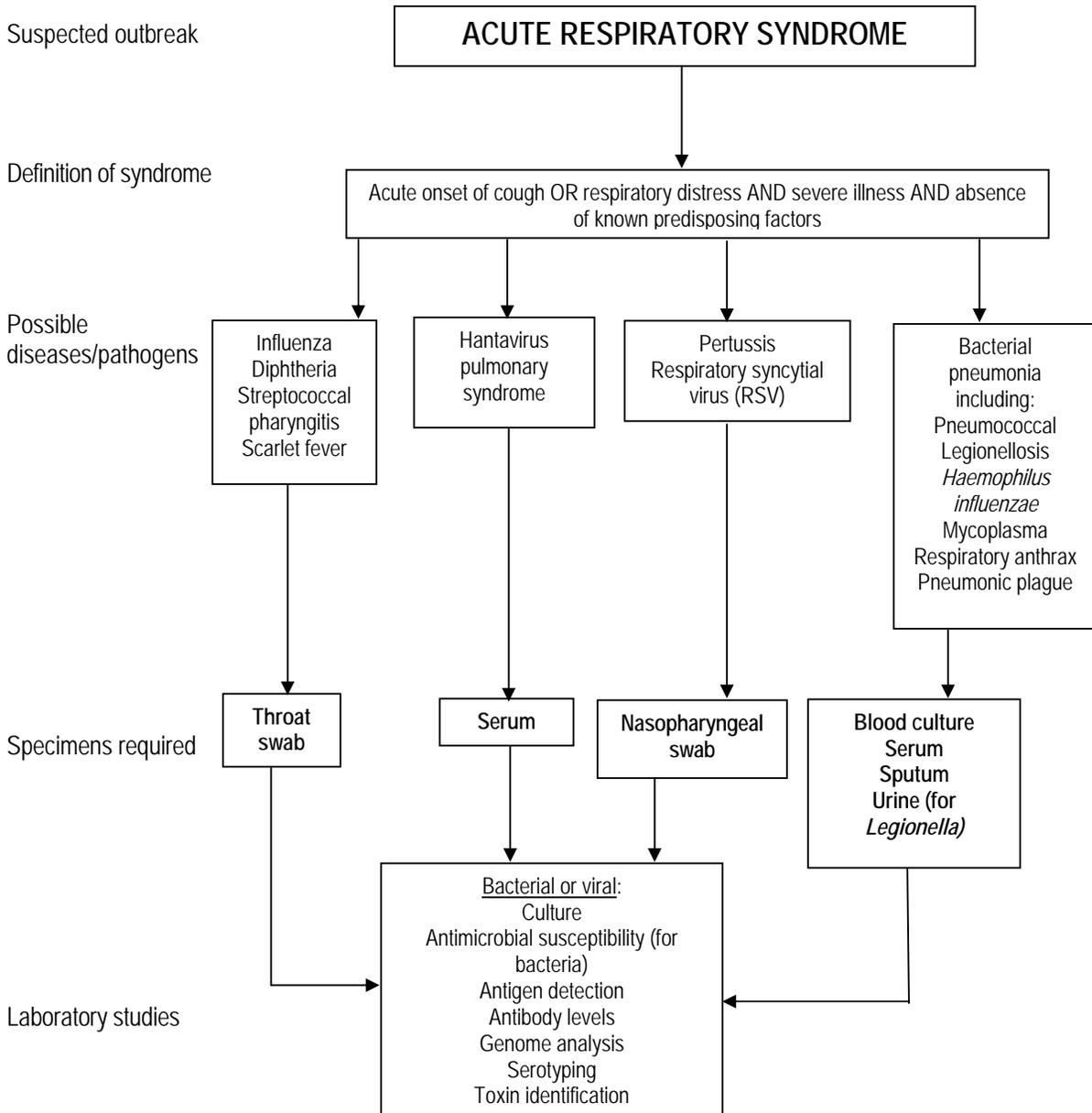






* Requires specialized media and handling procedures. See WHO/SEARO Communicable Diseases toolkit for Tsunami affected areas- guidelines on "Collection of laboratory specimens", January 2005.





Adapted from: *Guidelines for the collection of clinical specimens during field investigation of outbreaks*. Geneva, WHO, 2000 (WHO/CDS/CSR/EDC/2000.4).

APPENDIX 9: STEPS IN OUTBREAK MANAGEMENT

<p>PREPARATION</p> <ul style="list-style-type: none"> • Health coordination meetings. • Surveillance system – weekly health reports to WHO. • Stockpiles – specimen kits, appropriate antibiotics, IV fluids. • Epidemic investigation kits. • Contingency plans for isolation wards in hospitals. • Laboratory support.
<p>DETECTION</p> <p>If a certain number of cases of any of the following diseases/syndromes is diagnosed (i.e. alert threshold is passed):</p> <ul style="list-style-type: none"> • Acute watery diarrhoea in over-5-year-olds. • Bloody diarrhoea. • Suspected cholera. • Measles. • Meningitis. • Acute haemorrhagic fever syndrome. • Acute jaundice syndrome. • Suspected polio (acute flaccid paralysis). • Cluster of deaths of unknown origin. <p>(Diseases/syndromes in list should be modified according to the country's most updated epidemiological profile. Inform your health coordinator as soon as possible. The health coordinator should inform the Ministry of Health and WHO.</p>
<p>RESPONSE</p> <p>Confirmation</p> <ul style="list-style-type: none"> • The lead health agency should investigate reported cases to confirm the outbreak situation – number of cases higher than that expected for same period of year and population. Clinical specimens will be sent for testing. • The lead health agency should activate an outbreak control team, with members drawn from relevant organizations: Ministry of Health, WHO and other United Nations organizations, nongovernmental organizations in the fields of health and water and sanitation, veterinary experts. <p>Investigation</p> <ul style="list-style-type: none"> • Confirm diagnosis (laboratory testing of samples). • Define outbreak case definition. • Count number of cases and determine size of population (to calculate attack rate). • Collect/analyse descriptive data to date (e.g. time/date of onset, place/location of cases and individual characteristics such as age/sex). • Follow up cases and contacts. • Determine the at-risk population. • Formulate hypothesis for pathogen/source/transmission. • Conduct further investigation/epidemiological studies (e.g. to clarify mode of transmission, carrier, infectious dose required, better definition of risk factors for disease and at-risk groups). • Write an investigation report (investigation results and recommendations for action). <p>Control</p> <ul style="list-style-type: none"> • Implement control measures specific for the disease and prevent exposure (e.g. isolation of cases in viral haemorrhagic fever outbreak). • Prevent infection (e.g. immunization in measles outbreak). • Treat cases as recommended in WHO guidelines.
<p>EVALUATION</p> <ul style="list-style-type: none"> • Assess timeliness of outbreak detection and response, cost. • Change public health policy if indicated (e.g. preparedness). • Write outbreak report and disseminate.

APPENDIX 10: SAFE WATER AND SANITATION

The following are effective methods to obtain safe drinking-water:

Boiling

To make water safe for drinking and hygiene purposes, bring it to a vigorous, rolling boil and keep it boiling for 1 minute. This will kill, or inactivate, most of the organisms that cause diarrhoea.

Household filtration

Household filtration should considerably reduce the pathogens in the water. It should be followed by disinfection through chlorination or boiling.

Disinfection through chlorination

The following guidelines should be translated into messages that take into account locally available products and measuring devices. To make water safe by chlorination, the first step is to make a stock solution of chlorine.

A stock solution can be prepared by adding the following products to one litre of water:

Product (% concentration by weight of available chlorine)	Amount for 1 litre
Calcium hypochlorite (70%); or	15 g
Bleaching powder or chlorinated lime (30%); or	33 g
Sodium hypochlorite (5%); or	250 ml
Sodium hypochlorite (10%); or	110 ml

The stock solution must be stored in a closed container, in a cool dark place and used within 1 month. It should be used to prepare safe water as follows:

Stock solution	Added volume of water
0.6 ml or 3 drops	1 litre
6 ml	10 litres
60 ml	100 litres

Mix by stirring, and allow the chlorinated water to stand for at least 30 minutes before using it. The free residual chlorine level after 30 minutes should be between 0.1 and 0.5 mg/litre. If the free residual chlorine is not within this range, the number of drops of the stock solution should be adjusted so that the final product falls within this range.

If the water is cloudy or turbid it must either be filtered before chlorination or boiled vigorously rather than chlorinated. Chlorination of turbid water might not make it safe.

See:

Current priorities: cholera and typhoid fever in tsunami affected areas of South Asia. WHO, 2004
http://www.who.int/cholera/tsunami_priorities/en/

Sanitation

Good sanitation can markedly reduce the risk of transmission of intestinal pathogens, especially where its absence may lead to contamination of clean water sources. High priority should be given to observing the basic principles of sanitary human waste disposal, as well as to ensuring the availability of safe water supplies.

Appropriate facilities for human waste disposal are a basic need of all communities; without such facilities there is a high risk of water-related diseases. Sanitary systems that are appropriate for the local conditions should be constructed with the cooperation of the community.

People will need to be taught how to use latrines, about the dangers of defecating on the ground, or in or near water, and about the importance of thorough hand-washing with soap or ash after any contact with excreta. The disposal of children's excreta in latrines needs to be emphasized.

See: Franceys R, Pickford J, Reed R. *A guide to the development of on-site sanitation*. Geneva, WHO, 1992.

Fact sheets on environmental sanitation WHO/EOS/96.4

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

Environmental health in emergencies and disasters: a practical guide

http://www.who.int/water_sanitation_health/hygiene/emergencies/emergencies2002/en/

APPENDIX 11: INJECTION SAFETY

Analysis of data collected as part of the Comparative Risk Assessment component of the Global Burden of Disease study suggests that the region that includes Indonesia faces substantial challenges in terms of unsafe injection practices and transmission of blood-borne pathogens through injections. In this region, the proportion of new infections with hepatitis B, hepatitis C, and HIV that are attributable to unsafe injection practices are 58.3%, 81.7% and 7.1% respectively.

In Indonesia, only 50% of EPI injections are administered safely (clean preparation, safe reconstitution and use of sterile syringe and needle), while therapeutic injections are safe in 30%. Sharps are presently collected in safety boxes in 130% of immunization and 0% of therapeutic settings, while they are found in open containers in 84% of health facilities.

Thus, in any relief efforts to assist the population and the displaced populations in this region of the world, safe and appropriate use of injections should be ensured through the following actions:

PATIENTS:

- State a preference for oral medications when visiting health care facilities.
- Demand a new, single-use syringe for every injection.

HEALTH WORKERS:

- Avoid prescribing injectable medication whenever possible.
- Use a new, single-use syringe for every injection.
- Do not recap syringes; discard them immediately in a sharps box to prevent needlestick injury.
- Dispose of by open-air incineration and burial of full sharps boxes.

IMMUNIZATION SERVICES:

- Deliver vaccines with matching quantities of auto-disable syringes and sharps boxes.
- Make sterile syringes and sharps boxes available in every health care facility.

ESSENTIAL DRUGS:

- Build rational use of injections into the national drug policy.
- Make single-use syringes available in quantities that match injectable drugs in every health care facility.

HIV-AIDS PREVENTION:

- Communicate the risk of HIV infection associated with unsafe injections.

HEALTH CARE SYSTEM:

- Monitor safety of injections as a critical quality indicator for health care delivery.

MINISTRY OF HEALTH:

- Coordinate safe and appropriate national policies with appropriate costing, budgeting and financing.

REMEMBER:

- Observe the "ONE SYRINGE, ONE NEEDLE SET, ONE INJECTION" rule
- A safe injection is one that:
 - Does no harm to the recipient.
 - Does not expose the health worker to avoidable risk.
 - Does not result in waste that puts other people at risk.
- An unsterile injection is usually caused by:
 - Reusable syringes that are not properly sterilized before use.
 - Single-use syringes that are used more than once.
 - Used syringes and needles that are not disposed of properly.

APPENDIX 12: KEY CONTACTS FOR INDONESIA

Table 1: World Health Organization – Indonesia

<p>Dr. Georg Petersen The WHO Resident representative - Indonesia Bina Mulia I, Floor 9. Jl. HR. Rasuna Said Kav. 10-11 Kuningan Jakarta 12950 Phone: (62-21) 520 1166 Phone : (62-21) 520 4349 Fax : (62-21) 520 1164 Email: petersen@who.or.id Email: who@who.or.id</p>
<p>Dr Jai Narain Chair, Tsunami technical group World Health Organization Regional Office for South-East Asia World Health House Indraprastha Estate Mahatma Gandhi Marg New Delhi 110 002, India</p> <p>Fax: 91-11-2337 9507, 91-11-2337 0972.</p>

Table 2: Relevant WHO Regional Offices and Headquarters Technical Staff

Area of work	Regional and National contact	HQ contact
Communicable Diseases in Emergencies	Dr Jai Narain narainj@whosea.org	Dr Máire Connolly connollyma@who.int Dr Michelle Gayer gayerm@who.int Dr Pamela Mbabazi mbabazip@who.int
Outbreak alert and response	Dr Jai Narain narainj@whosea.org	Dr Mike Ryan ryanm@who.int Dr Tom Grein greint@who.int Mr Pat Drury druryp@who.int outbreak@who.int
Acute lower respiratory infections		Dr Shamim Qazi gazis@who.int
Bacillary dysentery – Cholera Typhoid Fever – other Diarrhoeal diseases		Dr Claire-Lise Chaignat chaignatc@who.int Dr Juerg Draeyer draeyerj@who.int

Diphtheria	Dr Arun Bhadra Thapa thapaa@whosea.org	Dr Julian Bilous bilousj@who.int
Dengue		Dr Renu Dayal-Drager dayaldragerr@who.int Dr M ke Nathan nathanm@who.int
Food safety	Dr Abdul Sattar Yoosuf Yoosufa@whosea.org	Dr Jorgen Schlundt schlundtj@who.int
HIV/AIDS		Dr Andrew Ball balla@who.int
Malaria	Thimasarn, Dr Krongthong thimasarn@un.org	Dr Charles Delacollette delacollettec@who.int Dr Aafje Rietveld rietvelda@who.int
Measles	Dr Arun Bhadra Thapa thapaa@whosea.org	Dr Brad Hersh hershb@who.int Dr Johannes Schmidt schmidtj@who.int
Meningococcal disease		Dr William Perea peraw@who.int Dr. Eric Bertherat bertherate@who.int
Pertussis (whooping cough)	Dr Arun Bhadra Thapa thapaa@whosea.org	Dr Julian Bilous bilousj@who.int Dr Philippe Duclos duclosp@who.int
Poliomyelitis	Dr Arun Bhadra Thapa thapaa@whosea.org	Mr Chris Maher maherc@who.int Ms Claire Chauvin chauvinc@who.int
Rabies		Dr François-Xavier Meslin meslinf@who.int
Safe water and Sanitation	Mr Han Heijnen heijnenh@whoban.org	Mr Jose Hueb huebj@who.int
Schistosomiasis		Dr Lorenzo Savioli saviolil@who.int Dr Dirk Engels engelsd@who.int

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Soil-transmitted helminths		Dr Lorenzo Savioli savioli@who.int Dr Dirk Engels englesd@who.int
Tetanus	Dr Arun Bhadra Thapa thapaa@whosea.org	Dr Julian Bilous bilousj@who.int Dr Brad Hersh
Tuberculosis	Dr Nani Nair nairn@whosea.org	Dr Salah-Eddine Ottmani ottmanis@who.int Dr Malgosia Grzemska grzemska@who.int
Vector control	Dr Chusak Prasittisuk chusakp@whosea.org	Dr Mike Nathan nathanm@who.int
Viral haemorrhagic fevers		Dr Cathy Roth rothc@who.int Mr. Pierre Formenty formentyp@who.int

APPENDIX 13: LIST OF WHO GUIDELINES ON COMMUNICABLE DISEASES

Title	Publication no./Date
FACT SHEETS	
Anthrax	Fact Sheet No. 264 October 2001 http://www.who.int/inf-fs/en/fact264.html
Cholera	Fact Sheet No. 107 Revised March 2000 http://www.who.int/inf-fs/en/fact107.html
Dengue and dengue haemorrhagic fever	Fact Sheet No. 117 Revised November 1998 http://www.who.int/inf-fs/en/fact117.html SEARO Fact Sheet on Dengue Fever and Dengue Haemorrhagic Fever http://w3.whosea.org/LinkFiles/Fact_Sheet_on_Dengue_DHF_Fact_sheet-Dengue.pdf
Diphtheria	Fact Sheet No. 89 Revised September 2000 http://www.who.int/inf-fs/en/fact089.html
Epidemic dysentery	Fact Sheet No. 108 Revised October 1996 (Being update)
<i>Escherichia coli</i> 0157:H7	Fact sheet No. 103 Revised December 2000 http://www.who.int/inf-fs/en/fact103.html
Food safety and foodborne illness	Fact Sheet No. 237 revised January 2002 http://www.who.int/inf-fs/en/fact237.html
Hepatitis B	Fact Sheet No. 204 Revised October 2000 http://www.who.int/inf-fs/en/fact204.html
Hepatitis C	Fact Sheet No. 164 Revised October 2000 http://www.who.int/inf-fs/en/fact164.html
Influenza	Fact Sheet No. 211 February 1999 http://www.who.int/inf-fs/en/fact211.html
Influenza A(H5N1)	Fact Sheet No. 188 January 1998 http://www.who.int/inf-fs/en/fact188.html
Injection safety: background	Fact Sheet No. 231 Revised April 2002 http://www.who.int/inf-fs/en/fact231.html
Injection safety: facts & figures	Fact Sheet No. 232 October 1999 (Being updated)
Injection safety: a Glossary	Fact Sheet No. 233 October 1999 http://www.who.int/inf-fs/en/fact233.html
Injection safety: questions & answers	Fact Sheet No. 234 October 1999 (Being updated)
Malaria	Fact Sheet No. 94 http://www.who.int/inf-fs/en/fact094.html
Plague	Fact Sheet No. 267 January 2002 http://www.who.int/inf-fs/en/fact267.html
Poliomyelitis	Fact Sheet No. 114 Revised August 2002 http://www.who.int/mediacentre/factsheets/fs114/en/
Rabies	Fact Sheet No. 99 Revised June 2000 http://www.who.int/inf-fs/en/fact099.html

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Salmonella	Fact Sheet No. 139 January 1997 (Being updated)
Smallpox	October 2001 http://www.who.int/emc/diseases/smallpox/factsheet.html
Tuberculosis	Fact Sheet No. 104 Revised August 2002 http://www.who.int/mediacentre/factsheets/who04/en/
Typhoid fever	Fact sheet No. 149 March 1997 http://www.who.int/inf-fs/en/fact149.html
The World Health Organization	Fact Sheet No. 126 August 1996 http://www.who.int/inf-fs/en/fact126.htm
GUIDELINES/PUBLICATIONS/REPORTS	
Communicable Diseases control in emergencies - A field manual. http://www.who.int/infectious-disease-news/IDdocs/whocds200527/whocds200527chapters/index.htm	WHO/CDS/2005.27 ISBN 92 4 154616 6
Protocol for the assessment of national communicable disease surveillance and response systems. Guidelines for assessment teams http://www.who.int/emc-documents/surveillance/whocdscsr20012c.html	WHO/CDS/CSRIISR/2001.2 English only
Strengthening implementation of the Global Strategy for Dengue Fever/Dengue Haemorrhagic Fever Prevention and Control http://www.who.int/emc-documents/dengue/whocdsdenic20001c.html	WHO/CDS/(DEN)/IC/2000.1 English only
WHO report on global surveillance of epidemic-prone infectious diseases http://www.who.int/emc-documents/surveillance/whocdscsr20001c.html	WHO/CDS/CSRII SR/2000.1 English only
Guidelines for the collection of clinical specimens during field investigation of outbreaks http://www.who.int/emc-documents/surveillance/docs/whocdscsredc2004.pdf	WHO/EDC/2000.4 English only
Hepatitis A http://www.who.int/emc-documents/hepatitis/whocdscsredc20007c.html	WHO/CDS/EDC/2000.7 English only
Guidelines for epidemic preparedness and response to measles outbreaks http://www.who.int/emc-documents/measles/whocdscsr991c.html	WHO/CDS/CSRIISR/99.1 English only
Influenza pandemic preparedness plan. The role of WHO and guidelines for national and regional planning http://www.who.int/emc-documents/influenza/whocdscsredc991c.html	WHO/CDS/CSR/EDC/99.1 English only
Plague manual: epidemiology, distribution, surveillance and control http://www.who.int/emc-documents/plague/whocdscsredc992c.html	WHO/CDS/CSR/EDC/99.2 English and French
Laboratory methods for the diagnosis of meningitis caused by Neisseria meningitidis, Streptococcus pneumoniae, and Haemophilus influenzae http://www.who.int/emc-documents/meningitis/whocdscsredc997c.html	WHO/CDS/CSR/EDC/99.7 English and French
Laboratory methods for the diagnosis of epidemic dysentery and cholera, 1999 http://www.who.int/emc/diseases/cholera.html	WHO/CDS/CSR/EDC/99.8 English and French
Control of epidemic meningococcal disease. WHO practical guidelines. 2nd ed. http://www.who.int/emc-documents/meningitis/whoemcbac983c.html	
Guidelines for the surveillance and control of anthrax in human and animals. 3rd ed.	
Cholera and other epidemic diarrhoeal diseases control. Technical cards on environmental sanitation, 1997 http://www.who.int/emc-documents/cholera/whoemcdis976c.html	
Epidemic diarrhoeal disease preparedness and response. Training and practice, 1998 (Participant's manual) http://www.who.int/emc-documents/cholera/whoemcdis973c.html	WHO/EMC/97.3 Rev.1 English, French and Spanish

Epidemic diarrhoeal disease preparedness and response. Training and practice, 1998 (Facilitator's guide) http://www.who.int/emc-documents/cholera/whoemcdis974c.html	WHO/EMC/97.4 Rev.1 English, French and Spanish
Dengue haemorrhagic fever: diagnosis, treatment, prevention and control. 2nd ed. http://www.who.int/emc/diseases/ebola/Denguepublication/index.html	1997 English only
Guidelines for the control of epidemics due to <i>Shigella dysenteriae</i> type 1 http://www.who.int/child-adolescent-health/Emergencies/Shigellosis_guidelines.pdf	Draft, 2005
VIDEOS	
Protecting ourselves and our communities from cholera (41 min). http://www.who.int/emc/diseases/cholera/videos.html	2000 English and French
WEB SITES	
WHO	http://www.who.int/
WHO/Cholera	http://www.who.int/topics/cholera/en/index.html
WHO Communicable Diseases and Surveillance	http://www.who.int/csr/en/
WHO Communicable Diseases Surveillance and Response	http://www.who.int/csr/
WHO Infectious Diseases news, documents and Communicable disease toolkits	http://www.who.int/infectious-disease-news/
WHO Roll Back Malaria partnership	http://www.rbm.who.int/
WHO/ Roll Back Malaria department	http://www.mosquito.who.int/malariacontrol
WHO/Stop TB	Http://www.stoptb.org/
WHO/Water and Sanitation	http://www.who.int/water_sanitation_health/en/

APPENDIX 14: IMMUNIZATION SCHEDULE FOR INDONESIA

Vaccine	Vaccine type	Schedule
BCG	Bacille Calmette/Guerin vaccine	At Birth
DTwP	Diphtheria and tetanus with whole cell pertusis vaccine	2, 3, 4 months
DT	Tetanus and diphtheria toxoid children's dose	7 years (5 dose TT schedule for school children)
HepB	Hepatitis B vaccine	At Birth, 2, 3 months
OPV	Oral polio vaccine	At Birth, 1, 2, 3 months
Measles	Measles vaccine	9 months
Vitamin A	Vitamin A supplementation	6 months, 1 year (x2: February and August)

APPENDIX 15: DEMOGRAPHIC PROFILE OF INDONESIA, 2005 - 2025

Indicator	2005	2010	2015	2020	2025
Population (thousands)	225 313	238 374	250 428	261 053	270 113
Male population (thousands)	112 605	119 130	125 186	130 487	134 970
Female population (thousands)	112 709	119 244	125 242	130 565	135 142
Population sex ratio (males per 100 females)	99.9	99.9	100.0	99.9	99.9
Percentage aged 0-4 (%)	9.6	8.9	8.4	7.7	7.2
Percentage aged 5-14 (%)	19.1	18.0	17.0	16.1	15.1
Percentage aged 15-24 (%)	19.1	18.0	17.0	16.2	15.5
Percentage aged 60 or over (%)	8.3	8.8	9.7	11.2	12.8
Percentage aged 65 or over (%)	5.5	5.9	6.4	7.1	8.4
Percentage aged 80 or over (%)	0.6	0.7	0.9	1.0	1.1
Percentage of women aged 15-49 (%)	55.1	55.1	54.7	53.7	52.5
Median age (years)	26.2	27.9	29.6	31.3	32.9
Population density (per sq. km)	118	125	131	137	

Data source: UNITED NATIONS POPULATION DIVISION. World Population prospectus: 2002 revision Population database.

APPENDIX 16: POPULATION RATES FOR INDONESIA, 2005 - 2025

Indicator	2005-2010	2010-2015	2015-2020	2020-2025
Population change per year (thousands)	2 612	2 411	2 125	1 812
Births per year, both sexes combined (thousands)	4 435	4 325	4 160	3 988
Deaths per year, both sexes combined (thousands)	1 643	1 734	1 855	1 996
Population growth rate (%)	1.13	0.99	0.83	0.68
Crude birth rate (per 1,000 population)	19.1	17.7	16.3	15.0
Crude death rate (per 1,000 population)	7.1	7.1	7.3	7.5
Total fertility rate (children per woman)	2.20	2.10	2.01	1.94
Net reproduction rate (per woman)	1.01	0.98	0.94	0.91
Infant mortality rate (per 1,000 births)	34.3	29.2	25.3	21.9
Life expectancy at birth, both sexes combined (years)	68.5	69.9	71.0	72.0
Life expectancy at birth, males (years)	66.8	68.3	69.3	70.3
Life expectancy at birth, females (years)	70.3	71.5	72.7	73.

Data source: UNITED NATIONS POPULATION DIVISION. World Population prospectus: 2002 revision Population database.

APPENDIX 17: BASIC HEALTH INDICATORS IN INDONESIA, 2005

Life expectancy at birth (years), 2002	66.6 years
Total population (2002)	217.1 million
Annual population growth rate (2002 - 2015)	1.1
Urban population (2002)	44.5 million
Population under 15 years (2002)	29.9 million
Population aged 65 and above	6.4 million
Total fertility rate (births per woman), 2000 - 2005	2.4
Maternal mortality ratio reported (per 100,000 live births) 1985 - 2002	380
Maternal mortality rate reported (per 100,000 live births), 2000	230
Under-five mortality rate (per 100,000 live births), 2002	45
Infant mortality rate (per 100,000 live births), 2002	33
Population with sustainable access to an improved water source (2000)	78%
Population with sustainable access improved sanitation (2000)	55%
Under nourished people (% of total population), 1999/2001	6%
Infants with low birth weight	10%

Data source: **Human Development Report 2004**. *Cultural liberty in today's diverse world*.

<http://hdr.undp.org/reports/global/2004/>

APPENDIX 18: WHO RECOMMENDED VACCINATIONS AND OTHER PROPHYLACTIC REQUIREMENTS

Prepared by Regional Medical Services WHO-SEARO and Health and Medical Services (HMS) WHO- Geneva
For International health workers in the Tsunami affected areas

a) Vaccinations

S.No.		Sri Lanka	Indonesia	Maldives	Thailand	India	Myanmar
	Essential						
1.	Cholera* See notes below	+	+	-	+	+	-
2.	Typhoid	+	+	+	+	+	+
3.	Hepatitis A & B	+	+	+	+	+	+
4.	Tetanus (Td -adult form of tetanus toxoid and reduced amount of diphtheria toxoid).	+	+	+	+	+	+
	Optional						
1.	Influenza*	+	+	+	+	+	+
2.	Measles <i>Potential risk of epidemics in emergency situations</i>	+	+	+	+	+	+
3.	Rabies (pre-exposure)	+	+	+	+	+	+
4.	Japanese Encephalitis (JE)*	+	+		+	+	+
5.	Meningitis <i>Potential risk of epidemics in emergency situations</i>	+	+	+	+	+	+
6.	Polio* Booster dose is recommended for India.					+	

NB. a minimum period of time is needed to build up protective levels of antibodies after immunizations that may require several injections or oral doses. Therefore it is advised to plan as quickly as possible vaccination programs (if possible 2 weeks in advance). This notion and the duration of the mission may influence decisions and choice of vaccines in case of immediate departures. Completion of immunization schedule could be performed at the capital cities of Bangkok, Colombo, Jakarta if needed.

(a) **Cholera Vaccination:** Use combination **Oral** cholera & ETEC (*enterotoxigenic, E-coli*) vaccine (Brand name: DUKORAL), 2 oral doses to be taken at least at one week of interval ; Immunity is obtained one week after the second dose.

(b) **Hepatitis A:** if no proof of immunity by vaccine or illness even if departure at short notice.

(c) **Tetanus:** booster dose is recommended, if not taken in the last ten years. The adult form of Tetanus toxoid with a reduced amount of diphtheria toxoid (Td) should be used for adolescent and adult vaccinations.

d) **Polio:** Booster dose is recommended for all travellers to developing countries where poliomyelitis is still transmitted. (one lifetime dose before travel to endemic countries). For India make sure that polio vaccine is updated. If there is no notion of vaccination in childhood, the full vaccination scheme with IPV should be administered 4 weeks before departure.

(d) **Measles :** check that there has been either measles vaccines in childhood or illness, if not consider vaccine according to type of mission.

(e) **Flu vaccine** is recommended for travelers in countries where there are cases of Avian Flu (to prevent possibility of recombination).

(h) **Japanese encephalitis (JE)**, is endemic in South East Asia. Although there may be an increased risk of Japanese encephalitis in all countries in Asia affected by the tsunami (rural areas, not capital cities), full vaccination requires depending on the vaccine 2 to 4 weeks to complete: days 0, 7, 14 or 30 for the JE virus vaccine inactivated JE-Vax from BIKEN; days 0-7 or 14 for the Korean Green Cross JE inactivated vaccine with a third dose one year after.

An abbreviated schedule of 2 doses (days 0, 7) has been shown to provide seroconversion in 80% of vaccinees and possibly higher in some populations.

A third vaccine exists, (live vaccine) but is more difficult to find on the market.

Because serious adverse reactions to the vaccine (generalized itching, respiratory distress, angioedema, anaphylaxis) can occur in some individuals up to 1 week after vaccination, travelers should be aware of the possibility of delayed reactions. Vaccination is not recommended for imminent travel and short term travelers should take measures to prevent mosquito bites, such as the use of insect repellent and sleeping under insecticide-treated bed nets (preferably treated with permethrin). For travelers scheduled to depart in 2 weeks or more and who will stay for more than 2 weeks in endemic areas, JE vaccine should be administered.

(l) **Meningitis** should be considered for prolonged or repeated field missions.

b) Malaria prevention for tsunami affected areas

Malaria prevention is possible both by personal protection against mosquito bites and drug prophylaxis. It may be noted that at present there is no drug that totally guarantees malaria prevention and therefore, it is ever so important to combine personal protection measures along with drug prophylaxis to achieve maximum protection.

- Reinforce the use of **personal protection measures** between dusk and dawn (insect repellents, protective clothing, insecticide-treated mosquito nets).
- **Take and comply with drug prophylaxis when indicated.**
- **Carry a "Stand-by" emergency treatment** just in case (artemether/lumefantrine: Coartem®, or atovaquone/proguanil: Malarone®, or quinine plus tetracycline -- Note: Should not be the same drug as the one used for prophylaxis).

Falciparum malaria can be fatal. Consider the possibility of falciparum malaria in all cases of unexplained fever starting at any time between the seventh day of the first possible exposure to malaria and three months after the last possible exposure (rarely, later). Any individual who experiences a fever in this interval should immediately seek an accurate diagnosis (blood test) and prompt / effective treatment in consultation with medical personnel.

An attack of vivax malaria can be debilitating but is less likely to be life-threatening. Late onset vivax malaria may occur. Vivax relapses caused by persistent liver forms may appear up to 2 years after exposure. They are not prevented by current chemoprophylactic regimens but can be treated with chloroquine (or mefloquine or quinine if resistance is suspected). Primaquine will prevent further relapses by eliminating any remaining parasites in the liver.

Recommended prophylaxis and Stand-by emergency treatment options country-by-country are tabled below. Mefloquine prophylaxis may be preferable over doxycycline and atovaquone/proguanil for prevention of vivax malaria attacks. All three reserve treatment options are effective against acute attacks of falciparum malaria and vivax malaria, but recurrence of vivax malaria 3-4 weeks after atovaquone/proguanil treatment is a frequent problem.

More information: <http://www.who.int/ith>

Recommended Malaria Prophylaxis for Tsunami affected areas.

Country	Prophylaxis	Stand-by emergency treatment <i>Note: Should not be the same drug as the one used for prophylaxis</i>
Sri Lanka	Chloroquine plus proguanil (Nivaquine® + Paludrine®, or Savarine®) <i>first choice regimen</i> . If not available: <i>Mefloquine</i> (Lariam®; Mephaquine®), <i>Doxycycline</i> or <i>Atovaquone /Proguanil</i> (Malarone®) can be used as alternatives	<i>Artemether/lumefantrine</i> (Coartem®) or <i>Atovaquone/Proguanil</i> (Malarone®) or <i>Quinine plus Tetracycline</i>
Indonesia	Mefloquine (Lariam®, Mephaquine®) or Doxycycline or Atovaquone/proguanil (Malarone®)	<i>Artemether/Lumefantrine</i> (Coartem®) or <i>Atovaquone/Proguanil</i> (Malarone®) or <i>Quinine plus Tetracycline</i>
Maldives	None	None
Thailand Note: No risk in main cities and main tourist resorts	Doxycycline or Atovaquone/proguanil (Malarone®)	<i>Artemether/Lumefantrine</i> (Coartem®) or <i>Atovaquone/Proguanil</i> (Malarone®) or <i>Quinine plus Tetracycline</i>
India	Chloroquine plus proguanil (Nivaquine® + Paludrine®, or Savarine®) <i>first choice regimen</i> . If not available: <i>Mefloquine</i> (Lariam®; Mephaquine®), <i>Doxycycline</i> or <i>Atovaquone /Proguanil</i> (Malarone®) can be used as alternatives	<i>Artemether/Lumefantrine</i> (Coartem®) or <i>Atovaquone/Proguanil</i> (Malarone®) or <i>Quinine plus Tetracycline</i>
Myanmar	Mefloquine (Lariam®, Mephaquine®) or Doxycycline or Atovaquone/proguanil (Malarone®)	<i>Artemether/Lumefantrine</i> (Coartem®) or <i>Atovaquone/Proguanil</i> (Malarone®) or <i>Quinine plus Tetracycline</i>

Note:

- It should be borne in mind that consultants / staff may be traveling to more than one country & can be redeployed to other locations at short notice.
- *If traveling to multiple countries, doxycycline can be considered as a universal antimalarial drug of choice because of the additional benefit of protecting against other infections.*
- The Prophylactic drugs to be fully effective must be taken according to the instructions of the physician and *with unfailing regularity.*
- That current situations in the affected areas may change necessitating revision of recommendations.
- Remember the importance of **protection against mosquito bites**, day and night , as personal protection measures during the day are the only protection for **dengue fever** and you will protect yourself against **Malaria** (between dusk and dawn) and **JE**.