

***This fact sheet provides concise information on the top ten infectious diseases in the developing world.***

In the 21st century, there are still infections against which we are defenseless and which, despite all the medical advances, still kill millions of people every year. Poverty, war, hunger, lack of health infrastructure and sanitation, immigration, trade, globalization contribute to the spread of the infections. In the last years, outbreaks of ebola, cholera, pest, meningitis, SARS and bird flu have been witnessed. These are infectious diseases that have produced and produce a lot of victims around the world.

*Let us recount the top 10 infectious diseases till now, which literally brought the world down to it knees.*

**Pneumonia** can be produced by viruses or bacteria (like *Aeromonas hydrophila*). It produces fever, shiver, sweating, cough with expectoration, muscle, head and thoracic pain, appetite loss, weakness. It attacks especially patients with severe immunodepression, those that follow chemotherapy, people who are older than 75, asthmatics, smokers, alcoholics, those with renal insufficiency and children under 2 years of age. It affects especially the poor countries.

#### Facts & Figures

It affects 1 % of the planet's population and kills 3.5 million people each year.

Antibiotics work in the case of the bacteria. Therapy includes oxygen, liquids, and physiotherapy. Patients with a simple pneumonia can cure in 2-3 weeks, but elders or those with debilitating diseases can die of respiratory or cardiorespiratory failure. The vaccine trimetropin sulfamethoxazole is effective against the most frequent complications.

Malaria is caused by a protozoa spread by the female of the Anopheles mosquito.

It triggers fever, shivering, abundant sweating, articulation pains, severe headache, vomit and extreme weakness, so that the diseased cannot even cry.

It spreads during the rainy season, when the mosquitoes breed. Quinine extracted from the bark of the South American cinchona tree saved millions of malaria diseased. Many treatments have been developed (mefloquine, Halofantrine, Artemisia products) but none has a total effectiveness, as the parasite constantly mutates, and there is no vaccine.

#### Facts and Figures

It is found in 500 million people 300 million of these cases are severe. In the east African villages, children are bitten by the Anopheles mosquitoes carrying malaria 50-80 times a month.

Annually, 1.5 million people die of malaria (one million in Africa South of Sahara), a child every 30 seconds.

About 120 million people died of malaria since 1914, and the disease is endemic in 101 countries, mainly tropical, in Africa, Asia and America.

**Gonorrhoea and syphilis** are triggered by two bacteria (Neisseria and Treponema pallida) and are transmitted sexually.

In man, gonorrhoea produces urinary incontinence, urethra pain, reddening, penis burning sensation and testicle inflammation. In women, it induces severe pain which reaches the trumps and uterus. Syphilis induces ulcerated lesion (syphilis chancre) at the entrance site. After that, it triggers skin eruptions, fever, hair loss, less severe hepatitis and genital condilloms, but if untreated, the lesions extend to the nervous system, leading to death.

The treatment consists in extremely powerful antibiotics (ceftriaxone, Cefixime, and others) which are also extremely costly.

#### Facts and Figures

62 million people worldwide are affected, aged mainly 15 to 29 years, all over the planet, especially in urban areas and of low socioeconomic level.

**AIDS Human immunodeficiency virus (HIV)** leads to acquired immune deficiency syndrome (AIDS), which cripples a human's immune system. AIDS has been categorized as an epidemic by the CDC and the life expectancy has been extended despite the lack of a vaccination or cure. While on its own, the Ebola virus is much more deadly in the short term, most AIDS victims eventually succumb to death from an AIDS related sickness. is estimated to be found in 46-60 million people and it's produced by the human immunodeficiency virus (HIV), spread through blood, semen, and vaginal fluids. Some say the virus is still in an early stage.

The symptoms come rather late and start with exhaustion and fever. After that, ganglion inflammation appears along with persistent diarrhea, pneumonia and weight loss. In the final stage, the patient's state is profoundly altered.

Antiretrovirals can improve the immunity but its price is too costly for about 95 % of the infected. In pregnant women, antiretrovirals during the second and third trimesters of the pregnancy can avoid the child's infection.

There is no vaccine, and the combination of up to four different drugs is the main principle in stopping the disease. These drugs keep the blood lymphocytes at normal levels, maintaining the virus latent but without its deadly ability.

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### Facts and Figures

Each minute, five new persons get infected with HIV, and the virus kills young people, found in their productive period. It has killed 25 million people since 1981 and about 3.3 million people with HIV die annually. 68 million people could die between 2000-2020. Africa has lost 20 % of its labor power. Lifespan in Sub-Saharan Africa is now of 47 years old; without the AIDS it would have been 62.

In developed world, 58 % of the new cases are drug addicts who share syringes and 33 % through unprotected sexual contacts, but in undeveloped countries is mainly through unprotected sex and blood transfusions.

28 million of the HIV infected are found in Africa, and 0.5 million in West Europe; 300,000 in Eastern Europe, 600,000 in Eastern Asia and Oceania; 2.6 million in America (mostly South America).

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**Tuberculosis** is caused by the Koch bacterium. One third of the people carry the Koch bacterium, which spreads through the air and affects all the body, especially the lungs. It induces prolonged coughing, fever, shivering, bloody expectoration, weight loss, sweating, tiresome, and glossy eyes.

It is worldwide spread, but its advance is rampant in Bangladesh, China, Indonesia, Philippines, India and Pakistan, with over half of the new cases.

TB has a treatment, but it cannot be eradicated because of the emergence of multiresistant strains if the long and costly treatment, of over 6 months, is interrupted sooner than it should. 3-5 % of the new cases are coinfecting with HIV.

The vaccine is effective in children, but useless in adults. It is more aggressive in women and persons between 15 and 45 years old. Current employed drugs are isoniazid, ethambutol and Rifapentin.

**Leishmaniosis** is produced by a protozoa (Leishmania) that spreads through the bite of the sand flies (Phlebotomus).

The most severe type is "kala azar" ("black fever" in Hindi), which infects 0.5 million people, and incubation lasts some weeks. The parasite induces skin ulcers which extend all over the body and can produce

#### Facts and Figures

It is as old as the humankind- found even in mummies coming from the ancient Egypt and Peru.

.About 150 million people are estimated to have died of TB since 1914.

It infects one third of the world population and each year another new 8 million cases appear.

Each second a person dies of tuberculosis. Mutant strains are resistant to almost all drugs and kill about 50 % of the patients.

#### Facts and Figures

It infects 2 million people annually and about 12 million diseased are found worldwide, mostly adult men.

obstructions or nasal hemorrhage.

It causes severe lesions on the legs and a temporary or definitive physical disability.

Kala azar swells the spleen and the liver and attacks the bony marrow and lymph nodules. Without treatment, the parasite kills 75-95 % of the patients.

It is found mainly in Africa, China, India, Latin America, and outbreaks occur sometimes in Mexico and the US.

**Diarrhoea** is a condition of having frequent loose or liquid bowel movements. Acute diarrhoea is a common cause of death in developing countries and the second most common cause of infant deaths worldwide. The loss of fluids through diarrhoea can cause severe dehydration which is one cause of death in diarrhoea sufferers. Along with water, sufferers also lose dangerous amounts of important salts, electrolytes, and other nutrients. There are many causes of infectious diarrhoea, which include viruses, bacteria and parasites. Norovirus is the most common cause of viral diarrhea in adults, but rotavirus is the most common cause in children under five years old..

#### Facts and Figures

This kills around 2.2 million people each year.

The bacterium campylobacter is a common cause of bacterial diarrhoea, but infections by salmonellae, shigellae and some strains of Escherichia coli (E.coli) are frequent. In many cases of diarrhea, replacing lost fluid and salts is the only treatment needed. This is usually by mouth – oral rehydration therapy – or, in very severe cases, intravenously.

Prescribed medications sometimes contain pain-killers, such as morphine or codeine, to counter the cramps that can accompany diarrhea.

**Typhoid Fever** is an acute illness associated with fever caused by the Salmonella typhi bacteria. It can also be caused by Salmonella paratyphi, a related bacterium that usually causes a less severe illness. The bacteria are deposited in water or food by a human carrier and are then spread to other people in the area. The incubation period is usually one to two weeks, and the duration of the illness is about four to six weeks. The patient experiences poor appetite, headaches, generalized

#### Facts and Figures

Prior to the use of antibiotics, the fatality rate was 20%.

aches and pains, fever, lethargy, and diarrhoea. Typhoid fever is treated with antibiotics which kill the Salmonella bacteria. Death occurred from overwhelming infection, pneumonia, intestinal bleeding, or intestinal perforation. With antibiotics and supportive care, mortality has been reduced to 1%-2%. With appropriate antibiotic therapy, there is usually improvement within one to two days and recovery within seven to 10 days.

### **SARS**

Severe acute respiratory syndrome (SARS) has seen only one major outbreak in Asia a few years ago. Supposedly the Chinese government created a vaccine that was effective in about two-thirds of the test groups; however, outside of that many of the treatments have proven to cause just as many problems as SARS itself.

#### **Facts and Figures**

In most cases, the disease in its viral pneumonia form has a fatality rate of about 70 percent with the highest fatality rate among victims over the age of 65.

### **Ebola**

A discovery in the last 30 years, this strain of viruses has a fatality rate between 50-89 percent. . A Canadian company recently reported that they have created a vaccine that is effective in 99 percent of the test cases of monkeys. Unfortunately, no vaccine or treatment has been approved for humans at this time.

#### **Facts and Figures**

Known to be devastating to both humans and animals, Ebola will kill a person within a week to two weeks usually from multiple organ failure or hypovolemic shock