



WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

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Neglected Tropical Diseases (Part 1)

Neglected tropical diseases have received little attention and resources despite their magnitude and impact on both economic development and quality of life. However, in recent years, growing attention has been focused on neglected tropical diseases as both a public health issue and a human rights issue. This issue will discuss this matter in detail.

Epidemiology of Neglected Tropical Diseases

Neglected tropical diseases (NTD) are a group of communicable diseases which thrive in poor settings, killing around one billion people worldwide, while threatening the health of millions more. Of the world's poorest 2.7 billion people (defined as those who live on less than US\$ 2.00 a day), more than 1 billion are affected by one or more neglected tropical disease. Hundred percent of low-income countries are affected by at least five neglected tropical diseases simultaneously. More than 70% of countries and territories that report the presence of neglected tropical diseases are low-income and lower middle-income economies.

Neglected tropical diseases often result in life-long disabilities and deformities and sometimes even death. Neglected tropical diseases fall into two main categories:

1. **Endemic, chronic and disabling diseases** like river blindness for which effective low-cost treatments exist, but are often not accessible to all affected populations.
2. **Deadly diseases** like sleeping sickness for which the only option is systematic case finding and treatment at an early stage. Research and development has been insufficient and for some of these diseases there is no effective modern treatment.

These diseases not only survive and spread in conditions of poverty, but also exacerbate and perpetuate the poverty of affected communities.

Among many neglected diseases, WHO has focused mainly on 17 diseases which have been discussed in the latter part of the article.

The neglected tropical diseases include a range of diseases caused by individual pathogens, and groups of conditions caused by related microbial species. Most of the diseases in this group are parasitic diseases, caused by a variety of protozoan and helminth parasites.

These diseases frequently cluster geographically and overlap; individuals are often afflicted with more than one parasite or infection. Children and women are most vulnerable to infections of most neglected tropical diseases. Infections are attributable to unsafe water, poor housing conditions and poor sanitation. Neglected tropical diseases kill, impair or permanently disable millions of people every year, often resulting in life-long physical pain, social stigmatization and abuse. Many can be prevented, eliminated or even eradicated with improved access to existing safe and cost-effective tools

Morbidity and mortality of NTD may vary significantly from one place to another due to different local factors. This has several important implications. First, it means that pockets of high burden of NTDs are likely to “disappear” within statistical averages at higher levels. Second, it means that curative or preventive interventions will become more efficient if they can be focused on the hot spots, particularly as populations at these locations are likely to be burdened by several NTDs at the same time, further increasing the efficiency of multidisease interventions. Third, from an equity perspective it is mandatory to find the most affected populations in order to ensure that “the health of the most disadvantaged groups has improved faster than that of the middle- and high-income groups”.

Contents	Page
1. Leading Article - Neglected Tropical Diseases (part 1)	1
2. Surveillance of vaccine preventable diseases & AFP (12 th - 18 th March 2011)	3
3. Summary of newly introduced notifiable diseases (12 th - 18 th March 2011)	3
4. Summary of selected notifiable diseases reported (12 th - 18 th March 2011)	4

Human and economic burden

There is an unquantifiable dimension to the burden of NTDs that accounts for the unpaid work and productivity of millions of women. In countries where NTDs are endemic, women are the caregivers when children and family members are healthy and when they are sick; they collect water and fuel, grow vegetables and tend crops, provide meals and maintain the household. This vital work is unpaid and would be easier if women were relieved from the burden of NTDs.

The main neglected tropical diseases

Dengue a mosquito-borne viral disease. The most severe forms of the disease are dengue haemorrhagic fever and dengue shock syndrome; which are usually fatal within 12–24 hours.

Rabies a viral zoonotic disease mainly transmitted to humans through the bite of an infected dog. Rabies has a long incubation period and is always fatal within a few days of the onset of symptoms.

Trachoma a bacterial infection of the eye, caused by *Chlamydia trachomatis*. It is spread through contact with eye discharge from an infected person and is also transmitted through eyeseeeking flies. Untreated, this condition leads to the formation of irreversible corneal opacities and blindness.

Buruli ulcer a severe skin disorder caused by the bacterium *Mycobacterium ulcerans*, which belongs to the same family of organisms that cause leprosy and tuberculosis. Left untreated, it causes destruction of the skin and, in some cases, of bone, eyes and other tissue.

Endemic treponematoses – yaws, endemic syphilis (bijel) and pinta – are a group of chronic bacterial infections caused by treponemes that principally affect the skin.

Leprosy a chronic bacterial infection caused by the bacillus *Mycobacterium leprae*. The disease mainly affects the skin, peripheral nerves, mucosa of the upper respiratory tract and the eyes. The disease can now be cured easily using multidrug therapy.

Chagas disease (American trypanosomiasis) – a chronic debilitating condition caused by a protozoan parasite transmitted by the infected faeces of blood-sucking bugs, through transfusion of infected blood, by organ transplantation or congenitally from an infected mother to her foetus.

Human African trypanosomiasis (sleeping sickness) – a protozoan parasitic disease spread by the bite of the tsetse fly in impoverished rural areas of sub-Saharan Africa. When symptoms develop, the patient is often approaching the terminal stage of the disease which involves the central nervous system.

Leishmaniasis a protozoan parasitic infection transmitted by the bite of the sandfly. Visceral leishmaniasis, which attacks the internal organs, is the most severe form. Cutaneous leishmaniasis commonly causes ulcers of the face, arms and legs and leaves severe and permanently disfiguring scars and disability.

Cysticercosis, a severe helminth infection responsible for neurological damage, occurring in many resource-poor countries. It is acquired when humans ingest eggs released in the environment by the faeces of carriers of the tapeworm *Taenia solium*.

Dracunculiasis (guinea-worm disease) – a helminth infection transmitted by contaminated drinking-water. It is characterized by the emergence of a one-metre-long worm from a skin ulcer, usually in the leg.

Echinococcosis a helminth infection in which the larval form of the tapeworm *Echinococcus granulosum* gives rise to the formation of cysts in many organs; it occurs in individuals who live in close contact with domestic animals such as dogs and sheep which host the adult tapeworms.

Foodborne trematode infections a group of parasitic worm infections transmitted through consumption of raw fish, crustaceans or vegetables. They are responsible for severe morbidity, affecting especially in the liver and lungs.

Lymphatic filariasis (elephantiasis) a severely debilitating, disfiguring and stigmatizing disease caused by parasitic worms. It usually causes abnormal enlargement of the limbs and the genitals.

Onchocerciasis (river blindness) – caused by a filarial worm that is transmitted to humans through the bites of infected blackflies. The larvae mature to adult worms, causing a variety of conditions, including blindness.

Schistosomiasis (bilharziasis) – a disease caused by several species of parasitic blood flukes (trematodes) that leads to chronic ill-health. Infection is acquired from contaminated fresh water that contains the larval forms, known as schistosomes.

Soil-transmitted helminthiasis – also termed intestinal worm infections – are found worldwide in areas of poor sanitation. They are caused by four species of worms that infect children, leading to anaemia, vitamin A deficiency, stunted growth, malnutrition, intestinal obstruction and impaired development.

Among these 17 diseases few are prevalent and causing a burden in Sri Lankan setting. They are Dengue Fever, Rabies, Lymphatic filariasis, and soil transmitted helminthiasis. Leprosy is eliminated since 2006.

Sources

- ☑ Neglected tropical diseases, hidden successes, emerging opportunities- World Health Organization 2009
- ☑ Working to overcome the global impact of neglected tropical diseases- World Health Organization 2010
- ☑ A human rights-based approach- Neglected tropical diseases, Fact sheet, World Health Organization
- ☑ Equity, social determinants and public health programmes, Erik Blas and Anand Sivasankara Kurup, World Health Organization

This article was compiled by Dr. Pubudu Chulasiri-Medical Officer, Epidemiology Unit.

Table 1: Vaccine-preventable Diseases & AFP

12th - 18th March 2011(11th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	00	00	01	01	00	22	21	+ 04.8 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	00	02	00	00	00	02	00	00	00	04	05	24	53	- 54.7 %
Tetanus	00	00	00	00	01	00	00	00	00	01	00	05	06	- 16.6 %
Whooping Cough	01	00	00	00	00	01	00	00	00	02	00	08	04	100.0 %
Tuberculosis	12	69	146	06	30	11	00	16	40	330	207	1879	2188	- 14.1 %

Table 2: Newly Introduced Notifiable Disease

12th - 18th March 2011(11th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2011	Number of cases during same week in 2010	Total number of cases to date in 2011	Total number of cases to date in 2010	Difference between the number of cases to date in 2011 & 2010
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	18	05	06	01	04	10	09	03	18	74	92	1128	876	+ 28.8 %
Meningitis	02 GM=2	00	02 GL=1 MT=1	00	00	03 KN=2 PU=1	01 AP=1	01 BD=1	05 RP=4 KG=1	14	15	227	379	- 40.1 %
Mumps	10	01	05	01	04	07	03	06	07	44	17	464	379	+ 22.4 %
Leishmaniasis	00	00	11 HB=10 MT=1	00	00	01 KN=1	09 AP=6 PO=3	00	00	21	02	148	82	+ 80.5 %

Key to Table 1 & 2

Provinces: W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.
 DPDHS Divisions: CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

Leishmaniasis is notifiable only after the General Circular No: 02/102/2008 issued on 23 September 2008. .

Dengue Prevention and Control Health Messages

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

Table 4: Selected notifiable diseases reported by Medical Officers of Health
12th - 18th March 2011(11th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	69	939	2	58	0	2	2	48	0	4	18	83	0	3	3	13	0	1	77
Gampaha	31	338	1	27	1	6	1	16	0	8	24	172	0	9	3	23	1	2	100
Kalutara	13	142	4	39	0	2	3	21	0	6	11	48	0	0	0	1	0	0	67
Kandy	5	80	7	110	0	3	0	11	0	3	2	28	0	26	0	16	0	0	74
Matale	4	37	2	34	0	2	1	6	0	3	3	51	1	5	2	4	0	0	75
Nuwara	5	20	9	61	0	1	1	13	0	12	5	14	4	26	1	3	0	0	85
Galle	3	38	3	21	0	1	0	2	0	4	3	18	1	11	0	6	0	0	68
Hambantota	4	41	1	11	0	2	0	1	1	6	22	128	1	15	0	0	0	0	83
Matara	4	53	0	16	0	0	0	5	0	0	11	90	0	19	2	5	0	1	100
Jaffna	3	111	6	43	0	2	14	85	0	9	0	2	18	142	1	11	0	1	91
Kilinochchi	0	11	0	3	0	2	1	4	0	0	0	1	0	4	0	1	0	0	25
Mannar	1	16	0	3	0	0	1	7	0	0	4	11	1	27	0	0	0	0	80
Vavuniya	2	30	0	11	0	6	0	4	2	2	0	30	1	2	0	0	0	0	100
Mullaitivu	0	5	1	8	0	1	0	1	0	0	0	3	0	0	0	0	0	0	25
Batticaloa	18	149	7	102	0	2	0	2	1	6	1	9	0	0	0	1	0	1	93
Ampara	1	20	1	28	0	0	0	5	3	18	7	28	0	0	2	4	0	0	100
Trincomalee	0	35	23	91	0	0	0	1	1	5	11	45	0	1	0	3	0	0	73
Kurunegala	11	121	3	78	0	4	0	34	0	24	81	930	3	25	2	12	0	0	78
Puttalam	7	176	3	56	0	0	0	5	0	1	6	31	1	5	0	2	0	1	89
Anuradhapu	5	51	2	32	0	1	0	2	3	7	7	139	2	9	0	3	0	0	68
Polonnaruw	7	57	0	19	0	1	0	3	0	8	5	36	0	0	1	4	0	0	100
Badulla	4	52	4	34	1	1	0	14	0	0	1	15	0	6	1	13	0	0	73
Monaragala	2	48	0	21	0	1	0	10	0	3	0	35	0	19	2	18	0	0	64
Ratnapura	7	102	1	110	0	3	0	8	0	5	11	83	0	13	1	16	0	0	72
Kegalle	7	55	4	27	1	6	1	19	2	7	16	64	4	8	3	23	0	0	100
Kalmunai	2	9	4	93	0	0	0	0	0	1	0	2	0	0	0	1	0	0	62
SRI LANKA	215	2736	88	1136	03	49	25	327	13	142	249	2096	37	375	24	183	01	07	79

Source: Weekly Returns of Communicable Diseases WRCD).

*Dengue Fever / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.

**Timely refers to returns received on or before 18th March, 2011 Total number of reporting units =320. Number of reporting units data provided for the current week: 159

A = Cases reported during the current week. B = Cumulative cases for the year.

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