



WEEKLY SRI LANKA - 2012

WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health

231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@slt.net.lk
Epidemiologist: +94 11 2681548, E mail: chepid@slt.net.lk
Web: http://www.epid.gov.lk

Vol. 39 No.39

22nd – 28th September 2012

Climate Change and Health (Part I)

This is the first in a series of two articles on the effects of climate change on health

Background

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, wind and other weather patterns that last for decades or longer. The world's climate is showing signs of a shift, becoming warmer, with more precipitation and weather extremes. Potential effects of this climate change are likely to include more variable weather, stronger tropical cyclones, stronger and longer heat waves, more frequent heavy precipitation events (rain, snow etc), more frequent and severe droughts, extreme weather events such as flooding, rises in sea level and increased air pollution. Proactive health adaptation strategies are needed to protect people from the effects of climate change on human health and well-being.

Effects of climate change on temperature, precipitation and wind speed

Climate change is expected to increase global average temperatures, as well as the number and intensity of heat waves. Climate change is also predicted to result in changes in precipitation patterns, with more pronounced extremes such as flooding or drought expected. Furthermore, mean annual precipitation is expected to change, with some areas seeing an increase, whereas other areas such as the Mediterranean region seeing a decrease. Precipitation may increase in one season and decrease in another. Flows in rivers may change in areas where rivers are fed by snowmelt or glaciers. Tropical cyclones (typhoons and hurricanes) are predicted to become more intense with larger peak wind speeds and more heavy precipitation.

Changes in average climate, seasonal patterns and an increase in the number and intensity of extreme events can all influence human health.

Effects on health

Extreme events

An increase in the frequency and intensity of extremes of temperature, precipitation and wind speed have clear implications for morbidity and mortality. Flooding and storms increase the risk of deaths and non-fatal injuries. Mental health effects such as depression and anxiety after extreme events have been reported and may result in prolonged impairment. In addition to these effects, flooding has implications for other health effects such as diarrhoeal disease risk and the risk of outbreaks of vector borne diseases (see below).

To deal with the health effects of extreme events, the health sector must be engaged in disaster preparedness activities at all levels; international, regional, national, local and community. Better use should be made of existing early warning information on all time scales and new, easily accessible tools must be developed. Early warning systems must be coupled with plans of action, incorporating both disaster management and health expertise. This is an area where national and local government, humanitarian organisations as well as national and regional meteorological institutes should all play a role, down to the community level. Short-term weather forecasts and seasonal forecasts should be used to plan for the coming weeks and season ahead. This will allow for early action in terms of procurement and pre-positioning of stocks and giving preventive messages to communities.

Early warning tools need to be developed by meteorology services with different end-users in mind, including local humanitarian agencies. Such sys-

Contents	Page
1. <i>Leading Article – Climate Change and Health (Part I)</i>	1
2. <i>Surveillance of vaccine preventable diseases & AFP (15th– 21st Septembr 2012)</i>	3
3. <i>Summary of newly introduced notifiable diseases (15th– 21st Septembr 2012)</i>	3
4. <i>Summary of selected notifiable diseases reported (15th– 21st Septembr 2012)</i>	4

tems should ideally be developed together with users, with particular attention to developing and packaging the information in a way that truly helps the decision making process. Specific efforts need to 'bridge' the knowledge gap between the weather scientists and the operational humanitarian sector.

Direct effects of heat exposure

Climate change is expected to increase average temperatures as well as the number and intensity of heat waves. Heat waves are associated with increase in morbidity and mortality in the short term, especially in populations which are not adapted to extremely hot weather. Specific risk groups include not only persons with respiratory and cardiovascular disorders and the elderly, but also physically and mentally handicapped and other groups that are not capable of caring for themselves during an extreme event. The 2003 summer heat wave in Europe showed that even high-income countries are vulnerable to extreme weather events and although many deaths occurred among the elderly and ill, some of these deaths were associated with occupational exposure. The severity of the heat wave and the underlying health status of the population influences what proportion of the mortality that is due to short-term mortality displacement. In south Asia, heat waves have been associated with high mortality in rural populations as well as among the elderly and labourers who work outdoors.

Hot working environments also have non-fatal implications. Heat exposure increases the risk of having accidents. Hot working environments may decrease the ability to carry out physical tasks as well as have implications for mental task ability. Prolonged heat exposure may lead to heat exhaustion or heatstroke. In addition to the implications for health and well-being, climate change may have important direct effects on productivity through exposure of workers to heat stress.

Early warning systems for heat waves are in operation in many countries, including some in Asia, and these must be coupled to concrete action plans with activities throughout many different sectors within a society. Individual people, the health sector, care homes as well as civil society organizations must be made aware of what actions need to be taken, so that the most vulnerable can be safeguarded. Strong networks of information distribution and outreach in communities will play a vital role in implementing such a strategy.

With regards to longer-term planning, the risk of an increased frequency and intensity of heat waves and higher average temperatures should be taken into account during the design of homes and work environments. Urban areas tend to have higher temperatures during hot weather and this urban 'heat island' effect should be taken into account for future city planning. The adverse effects of occupational exposure to heat waves and high average temperatures may have implications for labour regulations. Interventions such as reducing direct sun exposure for workers can be made.

Diarrhoeal diseases

High temperatures, water scarcity and water abundance resulting from flooding or heavy precipitation have been shown to be related to diarrhoeal diseases. After a flood-event, rates of diar-

rhoeal disease, including cholera, may increase, especially in areas where sanitary facilities are poor. Heavy rainfall, even without flooding, may increase rates of diarrhoeal diseases as latrines or sewage systems overflow. Increases in soil run-off may contaminate water sources. With heavy precipitation events expected to become more common, rates of diarrhoeal diseases may increase and it is likely that the most vulnerable populations will suffer the greatest burden.

Water scarcity on the other hand is also likely to have consequences for public health. Lack of availability of water for personal hygiene and washing of food may lead to an increase in diarrhoeal disease and other diseases associated with poor hygiene.

Cholera outbreaks in the Amazon have been linked to low river flows in the dry season, which may be due to pathogen concentration in pools. A high concentration of pathogens may also overload water treatment plants.

Finally, high temperatures are an independent risk factor for increased rates of diarrhoeal diseases, including salmonella and cholera. Cholera outbreaks in coastal areas of Bangladesh have been linked with sea surface temperature and abundance of plankton, which are thought to be an environmental reservoir for the cholera pathogen.

The better the sector is at dealing with current variability in climate and extremes at present, the better prepared it will be for increased variability brought about by climate change. Ensuring a better baseline level of water and sanitation infrastructure and increasing awareness of the importance of hygiene are measures that are keys to reducing a community's vulnerability to extreme weather events and more long-term changes in average water availability or average temperatures. The need to improve sanitation and access to safe water is represented in the Millennium Development Goals and efforts to achieve this must take place at local, national and international levels. This is a clear example of 'no-regrets' measures, which will improve health even without the additional risks brought about by climate change.

Planning for gradual changes in average water availability requires many sectors to come together, ensuring that health concerns must be represented 'at the table' with water managers and city planners. Importantly, plans need to be developed to ensure water availability throughout the year in areas where precipitation is expected to increase in the rainy season and decrease in the dry season. Such collaboration between the health sector and other sectors must take place at local, regional as well as national levels. Long-term adaptive investments in infrastructure, in particular the capacity of water treatment plants and day water run-off structures in urban environments, are often needed in order to handle changes in seasonal precipitation patterns and extreme water-related events.

Source

Climate change and Health, available from www.ccdcommission.org/Filer/commissioners/Health.pdf

Compiled by Dr. Madhava Gunasekera of the Epidemiology Unit

Table 1: Vaccine-preventable Diseases & AFP

15th – 21th September 2012 (38thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2012	Number of cases during same week in 2011	Total number of cases to date in 2012	Total number of cases to date in 2011	Difference between the number of cases to date in 2012 & 2011
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	03	00	00	00	00	00	00	00	00	03	04	60	68	- 11.7 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Measles	02	00	00	00	00	00	01	00	00	03	00	47	106	- 55.6 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	09	20	- 55.0 %
Whooping Cough	00	00	02	00	00	00	01	00	00	03	03	74	44	+ 68.2%
Tuberculosis	84	00	01	03	05	28	10	08	09	148	258	6403	6873	- 06.8 %

Table 2: Newly Introduced Notifiable Disease

15th – 21th September 2012 (38thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2012	Number of cases during same week in 2011	Total number of cases to date in 2012	Total number of cases to date in 2011	Difference between the number of cases to date in 2012 & 2011
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	07	06	07	05	05	3	05	06	07	51	66	3368	3259	+ 03.3 %
Meningitis	04 CB=2 GM=1 KL=1	05 ML=5	02 HB=1 MT=1	00	02 AM=2	05 KR=5	02 AP=1 PO=1	02 BD=2	02 KG=1 RP=1	24	17	605	661	- 08.5 %
Mumps	13	06	10	02	08	10	08	04	07	68	49	605	2395	+ 74.7 %
Leishmaniasis	01 CB=1	00	10 HB=7 MT=3	00	00	01 KR=1	03 AP=3	01 MO=1	02 RP=2	17	17	795	595	+ 33.6 %

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

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them free of water collection.

Table 4: Selected notifiable diseases reported by Medical Officers of Health
15th – 21th September 2012 (38thWeek)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Returns Received
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	106	7524	3	111	0	8	6	167	0	39	10	153	0	3	5	98	0	5	85
Gampaha	51	5950	1	72	0	12	2	52	0	25	3	190	0	17	8	256	0	0	67
Kalutara	20	2135	0	80	0	4	0	39	0	28	5	193	0	3	2	30	0	2	62
Kandy	28	1918	4	95	0	2	0	20	0	56	3	58	1	99	7	86	0	0	91
Matale	6	417	1	74	0	5	0	9	0	7	0	33	0	3	0	32	0	0	67
Nuwara	3	271	5	160	0	3	1	25	0	8	0	31	3	58	1	18	0	1	77
Galle	6	1233	0	105	0	6	0	12	0	17	0	101	0	61	0	2	0	0	74
Hambantota	10	447	1	30	0	2	0	6	0	30	1	64	3	45	1	19	0	0	92
Matara	41	1320	5	66	0	8	0	19	0	21	12	136	0	68	7	112	0	0	100
Jaffna	6	345	6	148	0	14	4	306	0	71	0	2	0	251	0	15	0	1	100
Kilinochchi	0	69	0	11	0	2	0	28	0	43	0	4	0	29	0	4	0	1	25
Mannar	1	126	1	54	0	4	0	21	0	16	0	20	0	42	0	2	0	0	40
Vavuniya	0	67	1	26	0	21	0	9	0	15	0	18	0	3	0	1	0	0	50
Mullaitivu	0	20	0	16	0	1	0	9	0	2	0	3	0	5	0	0	0	0	40
Batticaloa	1	603	13	186	0	2	0	15	0	307	0	8	0	0	0	7	0	4	57
Ampara	0	112	2	71	0	2	0	6	0	9	0	24	0	0	0	2	0	0	29
Trincomalee	1	125	8	156	0	2	0	16	0	12	0	37	0	17	0	4	0	0	100
Kurunegala	30	1834	3	153	0	14	1	78	0	33	3	121	1	27	2	119	0	4	85
Puttalam	80	1068	3	72	0	7	0	12	0	10	1	34	1	15	0	5	0	2	67
Anuradhapu	5	299	2	67	0	7	1	13	0	18	0	75	1	22	0	55	0	1	58
Polonnaruw	0	201	2	52	0	2	0	2	0	1	0	47	0	3	0	37	0	1	57
Badulla	10	273	3	99	0	4	0	49	0	3	0	34	3	96	0	38	0	0	82
Monaragala	6	218	1	51	1	5	1	21	0	7	0	60	1	69	4	160	0	2	91
Ratnapura	37	3229	5	177	0	25	1	44	0	12	4	245	0	37	2	94	0	1	67
Kegalle	29	2167	2	52	0	9	0	21	0	10	3	140	0	53	5	467	0	0	73
Kalmune	0	174	2	213	0	1	0	5	0	80	0	4	0	0	0	7	0	3	69
SRI LANKA	477	32145	74	2397	01	172	17	1004	00	880	45	1835	14	1026	44	1670	00	28	75

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 21st September, 2012 Total number of reporting units 329. Number of reporting units data provided for the current week: 249

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

PRINTING OF THIS PUBLICATION IS FUNDED BY THE WORLD HEALTH ORGANIZATION (WHO).

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to chepid@sltnet.lk.

ON STATE SERVICE

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10