WEEKLY EPIDEMIOLOGICAL REPORT

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Flood related health risks (Part II)

This is the second and last of the series of two articles on Flood related health risks.

Among the various health risks posed by flooding, communicable diseases, mainly water borne and vector borne diseases carry a higher disease burden. Apart from that there are health risks associated with handling of dead bodies. Flooding is also associated with inflicting injuries and trauma and can lead to other consequences like mental health derangement.

However, certain preventive measures can be adopted specially with regard to communicable diseases and health risks posed by corpses in order to reduce their impact on the affected society.

These preventive measures are short term measures and long term measures—both of which are equally important to reduce disease outbreaks. Short term measures include ensuring water safety, ensuring food safety, provision of proper sanitary facilities, proper handling of corpses, proper refuse disposal, proper waste water management, health education etc. long term measures usually aim at establishing new policies and protocols to effectively face another similar disaster situation.

Ensuring water safety

Provision of uninterrupted supply of safe water is the most important preventive strategy to reduce waterborne disease outbreaks. In a disaster situation, not only the water safety but also adequacy, supply and source has to be considered. Initially, the available water sources have to be identified and adequate water storage tanks have to be made available.

Chlorination of water is the most efficacious and easily available method to disinfect water. Chlorine is highly effective against most of the water borne pathogens except Cryptosporidium parvum oocyets and Mycobacteria species. Further to its efficacy few mg/litre of chlorine with a contact time of about 30 minutes can inactivate more than 99.99% of enteric bacteria and viruses. Depending on the concentration of organic material in the water, the level of requirement of chlorine varies. For an adequate chlorination of water, after 30 minutes, the residual concentration of active chlorine in the water should be between 0.2– 0.5 mg/l.

Ensuring food safety

Food safety as well as food adequacy and nutrition has to be taken in to consideration when provision of food to flood affected individuals. Victims receive food through local authorities as well as personal donations. Therefore the field level health officers, specially the Public Health Inspector (PHI) has to make sure that these food is hygienically prepared before distribution. Once the initial stage of the disaster situation is over, a place for preparation of food can be established in side the camp. However, proper hygienic practices should be strictly adhered to in these places and food handlers should be adequately educated on food safety practices and personal hygienic practices. Not only prepared food but also raw material should be safely stored and hygienically utilized.

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Provision of proper sanitary facilities

Spread of infectious diseases through faeco– oral route can be facilitated during a disaster situation like floods. To prevent this, proper sanitary facilities has to be immediately established. Initially, existing sanitary facilities has to be identified and adequacy of them have to be assessed. Depending on the number of individuals in the camp, where necessary, temporary latrines has to be constructed.

It is important to locate the latrines at least 30 meters away from any water source. Not only this, it should be made sure that disposal of excreta of infants, babies and disabled is properly done. The health care team, specially the PHI should assess regularly and ensure that the cleanliness of the latrines is maintained. Apart from that, soap and cleaning equipment should be continuously provided.

Proper handling of dead bodies

Corpses do not carry a immediate high risk of causing disease outbreaks. Therefore, there is time to dispose dead bodies, giving opportunity for the loved ones to conduct culturally appropriate funerals and burials according to their social customs. In a place where several cultural groups are present, it is ideal to provide separate areas for this purpose. If the existing places like graveyards or crematoria are not adequate, additional locations will have to be provided. In a disaster situation, burial is preferable to cremation.

However, healthcare workers who handle dead bodies will have to adopt specific precautions in order to reduce disease spread. It is recommended that graveyards should be located at least 30 meters away from ground water sources used for drinking water. The bottom of the grave should be at least 1.5 meters above the water table with a 0.7 meter unsaturated zone. It is important to make sure that surface water from graveyards does not enter inhabited areas.

When handling dead bodies, it is important to use gloves and properly dispose them without reusing. Universal precautions should be adhered to when handing blood and body fluids. Healthcare workers should be vaccinated against Hepatitis B. After handing the dead bodies as well as before eating, hands should be washed with soap and water. It is important to ensure the use of body bags when handling dead bodies. Vehicles and equipment should be disinfected after use in the process of handling corpses. However, it is not needed to disinfect dead bodies except in case of cholera.

Other short term preventive measures

Proper and timely disposal of garbage is important as accumulation of garbage provides sites on which flies, mosquitoes, insects and rodents can spread and assist in disease occurrence. Methods of garbage disposal can be several. A suitable adjacent area to the temporary shelter should be selected for sanitary burial or burning of garbage. In case where garbage is daily removed by local authorities, adequate number of garbage bins has to be provided for the garbage to be collected until it is taken away. It is useful to advice the people in camps to segregate waste and dispose. Along with this, control measures like insecticides, TCL powder usage etc has to be done to control flies, insects and rodents.

It is also important to prevent waste water getting stagnated inside the camp and draining through dwellings. Therefore, health care workers should coordinate with the local authorities and make arrangements for proper disposal of waste water.

Subsequent to a disaster situation like flooding number of mosquito breeding sites can invariably increase leading to spread of vector borne diseases. However, this increase in vector number is not immediate after flooding. Therefore, there is time to implement preventive strategies to reduce vector population. These strategies include indoor residual spraying, destruction of mosquito breeding sites, fogging etc. Along with this, the victim can be advised to protect themselves from mosquito bites by using nets, mosquito repellents etc. In cases of potential Malaria or Dengue outbreaks, it is important to track the case numbers weekly and provide laboratory based diagnosis. This will allow to detect early stages of an epidemic and provide time to implement preventive strategies to reduce mortality and morbidity. In such situations, it is useful to actively search for fever cases which will allow to reduce mortality specially in remote areas where access to health care facilities is limited. Although immunization against diseases like Chicken pox, Typhoid and Hepatitis A does not provide full protection, it will help to boost immunity during epidemics.

Sources

1. Flooding and communicable diseases fact sheet available at http://www.who.int/hac/techguidance/ems/flood_cds/en/
2. Epidemiology Unit official web site

Compiled by Dr. S.A.I.K. Sudasinghe of the Epidemiology Unit

Table 1: Selected notifiable diseases reported by Medical Officers of Health 21st – 27th May 2016 (22nd Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	61	5914	0	56	0	0	1	26	0	19	1	82	0	3	0	15	0	0	0	194	0	22	0	0	**13**	**13**
Gampaha	0	1983	0	33	0	5	0	12	0	5	0	124	0	7	0	16	0	0	0	184	0	20	0	3	**0**	**0**
Kalutara	6	1210	0	36	0	2	0	16	0	15	1	238	0	4	0	12	0	0	0	108	0	32	0	0	**7**	**7**
Kandy	34	896	5	84	1	12	0	9	1	24	0	68	1	49	0	36	0	0	5	81	0	25	0	6	**91**	**96**
Matale	12	175	1	14	0	1	0	9	0	2	0	48	0	11	0	13	0	1	0	20	0	44	0	14	**54**	**92**
NuwaraEliya	4	133	1	46	0	1	2	24	0	13	2	20	4	39	0	17	0	0	0	68	1	24	0	0	**100**	**100**
Galle	30	746	1	34	2	8	1	2	0	2	0	137	0	41	0	5	0	0	3	152	1	24	0	1	**80**	**100**
Hambantota	8	308	0	20	0	1	0	2	0	48	2	64	0	35	0	17	0	0	2	118	0	9	1	146	**92**	**100**
Matara	12	365	7	41	0	3	0	5	0	34	3	88	1	25	0	16	0	0	2	93	2	8	3	114	**100**	**100**
Jaffna	13	1224	5	102	0	3	0	44	3	32	0	8	3	523	1	8	0	0	1	102	0	26	0	1	**100**	**100**
Kilinochchi	2	47	2	23	0	0	0	24	0	4	0	11	0	17	0	0	0	0	0	3	0	7	0	0	**100**	**100**
Mannar	6	85	1	9	0	4	0	13	0	3	0	8	1	36	0	0	0	0	0	7	0	1	0	0	**80**	**100**
Vavuniya	1	147	0	5	0	2	1	20	1	23	0	11	0	8	0	6	0	0	3	19	0	3	0	3	**75**	**100**
Mullaitivu	3	97	1	11	0	0	0	13	0	4	0	21	0	5	0	0	0	0	0	3	0	5	0	4	**80**	**100**
Batticaloa	2	272	1	131	0	0	0	15	0	85	0	26	0	4	0	9	0	0	3	58	0	5	0	1	**50**	**93**
Ampara	0	91	0	14	0	0	0	0	2	15	0	22	0	0	0	6	0	0	3	60	0	1	0	5	**29**	**57**
Trincomalee	13	263	2	27	0	0	0	9	0	23	1	18	2	17	0	29	0	1	5	101	0	7	0	2	**83**	**92**
Kurunegala	46	786	4	104	0	7	0	1	0	6	1	72	0	10	1	16	0	2	4	151	1	26	3	45	**72**	**93**
Puttalam	7	553	1	24	0	2	0	4	0	0	0	30	0	55	0	0	0	0	1	40	3	24	0	0	**62**	**92**
Anuradhapura	2	273	0	31	0	1	0	3	0	21	1	169	0	18	0	11	0	0	0	116	2	19	2	99	**58**	**100**
Polonnaruwa	2	180	0	13	0	2	0	9	0	5	6	64	0	1	0	2	0	0	1	56	0	10	2	72	**86**	**100**
Badulla	6	248	7	56	0	9	0	4	1	19	2	28	0	42	4	73	0	0	2	91	3	96	0	1	**59**	**82**
Monaragala	5	162	0	28	0	1	0	2	0	9	2	135	3	64	2	95	0	2	2	34	0	16	0	19	**100**	**100**
Ratnapura	20	915	6	135	0	16	0	16	0	15	5	220	0	16	0	72	0	0	5	96	2	68	0	1	**50**	**89**
Kegalle	41	602	4	34	0	11	1	16	0	40	7	102	1	13	0	14	0	0	6	164	2	24	0	0	**82**	**100**
Kalmune	3	348	0	36	0	3	0	4	0	34	0	10	0	0	0	2	0	4	0	50	0	12	0	0	**54**	**85**
SRILANKA	**339**	**18023**	**49**	**1147**	**3**	**94**	**6**	**302**	**8**	**500**	**34**	**1864**	**16**	**1043**	**8**	**490**	**0**	**10**	**48**	**2169**	**17**	**558**	**11**	**537**	**66**	**83**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 27th May, 2016 Total number of reporting units 339 Number of reporting units data provided for the current week: 285 C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

21st – 27th May 2016 (22nd Week)

Disease	No. of Cases by Province									Number of cases during current week in 2016	Number of cases during same week in 2015	Total number of cases to date in 2016	Total number of cases to date in 2015	Difference between the number of cases to date in 2016 & 2015
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	01	00	00	00	00	01	01	03	02	24	29	-17.2%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	01	00	01	00	02	04	06	185	171	+8.1%
Measles	00	00	00	00	01	00	01	01	01	04	38	267	1045	-74.4%
Rubella	00	00	00	00	00	00	00	00	00	00	00	06	05	+20%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	03	07	-57.1%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	00	07	-100%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	30	34	-12.1%
Tuberculosis	08	13	11	06	00	00	09	04	25	76	211	3861	4056	-5.1%

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.

RDHS 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, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS** =Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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ON STATE SERVICE

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