WEEKLY EPIDEMIOLOGICAL REPORT

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Solid waste management in disaster management part I

This is the first in a series of articles on Solid waste Management in Disaster Management.

Solid waste management in emergencies

Solid waste management is an important part of disaster management due to several reasons. Disasters lead to increased collection of solid waste because normal ways of solid waste disposal are disrupted and the disaster itself generates a lot of solid waste.

What is solid waste?

Solid waste refers to all non-liquid waste generated by human activity and various solid waste materials resulting from the disaster. This may include, general domestic garbage like food waste and ash; improperly disposed of human faeces, waste derived from emergency supplies such as plastic water bottles and packaging; rubble resulting from the disaster; mud and slurry deposited in case of natural disasters and specialist waste such as medical waste from hospitals and toxic waste from industry.

Several factors determine the quantity and composition of waste produced by settlements and refugee camps. This includes the types of staple foods consumed by the affected community, type of economic activity and local practices of waste disposal. Apart from this lack of clarity as to who is responsible for waste disposal is the main reason why the collection of waste is more in disasters.

Importance of solid waste management in a disaster Proper waste management is of critical importance in disaster management. Poor waste management leads to unnecessary collections of solid waste which pose various health risks. On the other hand, improper methods of waste disposal also cause adverse health outcomes.

Flies, which are disease transporting vectors, breed within the waste. Water can get stagnated within the waste and provide mosquito breeding sites. Apart from that, the rodent population gets increased around the waste as they get attracted to waste for food and shelter and they breed around the waste. This poses a health risk as rats are reservoir species for diseases like Leptospirosis. Waste water produced by and associated with solid waste can get drained into drinking water sources and contaminate them. Not only that, the solid

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waste itself can block and contaminate these water sources. Heaps of waste also carry the risk of sudden fires.

Waste also includes other hazardous items such as needles, broken glasses and explosive material which have the potential to inflict injuries and trauma. On the other hand, there is a possibility that refugee camp dwellers starting to dispose of waste by themselves, using methods like improper burning and burial. Low-temperature burning of plastics leads to gas emissions which are hazardous to health. Uncontrolled dumping of waste can lead to the spread of dust as well as fungi. This can cause breathing difficulties.

Objectives of Management of solid waste

According to the Sphere standards, people should be able to live in an environment which is not contaminated by solid waste and they should have the means to dispose of their domestic waste conveniently and effectively. Therefore, proper solid waste management aims at minimizing health risks to the inhabitants of the refugee camps, visitors and surrounding communities.

The Sphere standards

The Sphere has set standards for solid waste management in disasters as well. The key indicators suggested by the sphere include,

· People from the affected population are involved in the designing and implementation of solid waste management.

· Household waste is put in containers daily for regular collection, burnt or buried in a specified refuse pit.

· All households have access to refuse containers and/or are no more than 100 meters from a communal refuse pit

· At least one 100 litre container is available per 10 families where domestic refuse is not buried on site

· Refuse is removed from the settlement before it becomes a nuisance or a health risk

Assessment of the problem

As an initial step to starting solid waste management, several questions have to be answered. Types of waste being generated by the community and the volume thereof have to be assessed. The volume and type of waste produced by the disaster itself have to be clarified. Along with this, the location of the waste produced by the disaster has to be determined. It is also important to assess whether there are any immediate health risks posed by them. Apart from that, it is essential to see whether there is any hazardous waste, as it is important to dispose of them immediately and securely. The next important step is to determine whether there is any responsible person or authority already appointed to handle solid waste. Existing disposal methods should also be identified and adequacy, therefore, has to be assessed. This will help to identify areas which need modification. During the assessment, it is also important to see what new methods are adopted after the disaster to dispose of solid waste. This assessment will help to identify whether there is any immediate risk associated with solid waste and determine the speed and intensity of the required interventions to dispose of waste.

Sources

1. Solid waste management in emergencies, available at http://www.who.int/water_sanitation_health/publications/2011/tn7_waste_mangt_en.pdf?ua=1
2. Domestic and Refugee Camp Waste Management Collection and Disposal, available at file:///C:/Users/Admin/ Downloads/tbn15-domestic-refugee-camp-waste - management-collection-disposal-210508-en.pdf

Compiled by

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to be continued ...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 19th – 25th Mar 2022 (12th Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		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	10	2143	0	2	1	1	0	0	0	3	3	25	0	0	1	1	0	0	3	8	1	2	0	1	4	100
Gampaha	60	1822	0	2	0	0	0	0	0	0	2	23	0	0	0	0	0	1	0	7	0	2	1	3	3	72
Kalutara	64	694	0	4	0	0	0	1	0	5	7	77	0	1	0	1	0	1	4	18	1	9	0	0	2	100
Kandy	22	506	0	3	0	0	0	0	3	3	0	21	2	7	0	4	0	0	1	8	0	1	0	1	3	96
Matale	8	122	0	0	0	0	0	0	0	0	2	14	0	2	0	1	0	0	0	5	0	1	18	119	12	100
NuwaraEliya	5	50	0	6	0	0	0	0	0	0	3	16	0	6	0	0	0	0	0	8	0	0	0	0	7	100
Galle	39	651	0	0	0	0	0	0	0	0	10	106	0	4	0	0	0	0	1	17	1	9	0	0	2	100
Hambantota	16	202	1	22	0	0	0	0	0	0	8	43	0	11	0	1	0	0	0	12	1	3	10	124	8	100
Matara	8	227	2	4	0	0	0	0	0	0	3	40	0	4	1	1	0	0	0	5	1	3	10	79	11	100
Jaffna	68	874	0	8	0	1	2	33	0	8	1	15	13	287	0	2	0	1	1	37	0	3	0	0	45	88
Kilinochchi	5	42	0	4	0	0	0	0	3	9	0	1	2	6	0	0	0	0	0	2	0	0	0	1	29	100
Mannar	2	140	0	1	0	0	0	0	0	0	0	8	0	2	0	1	0	0	0	0	1	13	0	0	20	82
Vavuniya	0	39	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	1	3	0	0	0	0	3	83
Mullaitivu	2	22	0	0	0	0	0	2	0	0	1	9	0	3	0	0	0	0	0	3	0	0	0	1	21	100
Batticaloa	36	291	3	25	1	5	0	0	0	4	2	12	0	0	0	0	0	0	0	5	1	13	0	1	26	100
Ampara	1	42	0	5	0	1	0	0	0	0	3	24	0	1	0	1	0	0	5	18	0	5	1	7	6	100
Trincomalee	32	319	0	11	0	0	0	1	0	0	0	5	0	1	0	4	0	0	0	1	0	2	0	0	20	92
Kurunegala	25	967	0	5	0	1	0	0	0	0	0	25	0	10	0	0	0	0	4	18	0	9	16	129	4	100
Puttalam	13	768	0	0	0	0	0	0	0	0	0	7	0	2	0	0	0	0	1	3	0	10	0	2	12	92
Anuradhapur	12	125	2	7	0	0	0	1	0	2	6	63	1	13	1	2	0	1	3	12	0	9	8	146	3	89
Polonnaruwa	2	39	0	2	0	0	0	0	0	1	2	37	0	0	0	0	0	0	0	2	0	1	9	98	5	88
Badulla	16	344	0	4	0	0	0	0	2	3	8	61	1	10	3	25	0	0	3	12	0	5	0	6	4	100
Monaragala	11	86	0	2	0	0	0	3	0	2	8	89	1	7	0	13	0	0	4	16	1	9	10	36	5	100
Ratnapura	36	544	0	12	1	5	0	1	0	15	13	188	1	6	0	6	0	0	2	19	1	6	15	68	4	95
Kegalle	19	349	0	2	0	0	0	1	1	4	7	112	0	5	0	2	0	0	4	22	3	12	0	7	3	100
Kalmune	20	176	0	16	0	0	0	0	0	3	0	3	0	1	0	0	0	0	1	10	2	7	0	0	21	100
SRILANKA	**62**	**11584**	**8**	**147**	**3**	**15**	**2**	**43**	**9**	**62**	**90**	**1026**	**21**	**389**	**6**	**65**	**0**	**4**	**38**	**271**	**14**	**134**	**98**	**829**	**9**	**95**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 25th Mar , 2022 Total number of reporting units 361 Number of reporting units data provided for the current week: 342 **C****-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

19th - 25th Mar 2022 (12th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2022	Number of cases during same week in 2021	Total number of cases to date in 2022	Total number of cases to date in 2021	Difference between the number of cases to date in 2022 & 2021
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	01	00	01	00	00	00	00	02	00	20	15	33.3 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	00	00	00	00	00	00	01	01	03	10	28	- 64.2 %
Measles	00	00	01	00	00	00	00	00	00	01	00	10	05	100 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
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	01	01	0 %
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	01	00	0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tuberculosis	412	00	04	09	05	00	00	20	00	450	223	1969	1590	23.8 %

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

NA = Not Available

Number of Malaria Cases Up to End of March 2022,

05

All are Imported!!!

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. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

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