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Control of Communicable Diseases during Disasters – Part 2

This is the second article of a series, titled "Control of Communicable Diseases during Disasters". The article discussed the assessment methods and how to set up a disease surveillance system following a disaster.

Accurate predictions of disasters are invaluable as it provides a lead time where evacuation procedures can take place which will drastically reduce the number of deaths and damages. Adhering to meteorological department warnings, setting up of Tsunami early warning systems, learning lessons from the past experiences (animals fled the areas hours before the Tsunami hits the ground in 2004) and anticipating disasters through triggering incidents (expect IDPs when war declared) could save lives of many.

Following are the principals of control of communicable diseases after a disaster situation.

- ♦ Situation assessment
    - Rapid assessment
    - In-depth assessment
    - Recovery assessment
- ♦ Disease Surveillance
- ♦ Disease Prevention
- ♦ Outbreak control
- ♦ Disease management
- ♦

Rapid Health Assessment

The objective of this exercise is to assess the extent of the emergency and to evaluate the current health status of the affected individuals. As the name implies it has to be done quickly as possible but without compromising the accuracy. Visual inspection of the site, interview the village leaders and key informants, usage of routine health records available with PHI and PHM about the population in the affected area will be the methods of use.

This starts with a quick survey of people affected according to their age groups, gender and requirements. (e.g. no. of infants, 1-5-year-old children, and school going children, pregnant women, elderly, and people with the non-communicable disease, people with disability and with special requirements, no. of deaths and no. of injured, etc..)

Then it is important to carefully identify the vulnerability of the spread of communicable diseases and the risk of outbreaks among the affected people. This can be ascertained by assessing the type and the extent of the disaster. For example risk of diarrheal diseases should be high in the expected list in the event of floods. Similarly, in the event of firearm explosion, the high possibility of respiratory tract related diseases should cross the mind.

Next, it is important to identify the immediate public health interventions required to the situation. The type and the extent of the interventions should be assessed. These could be food, temporary shelter, medicine, control measures to stop the spread of infections. Prioritizing of these interventions is required as the resources are always limited.

Quick evaluation of the resources in hand also very important at the initial stage because if you (either MOH or PHI) feels that available resources are inadequate to carry out these prioritized interventions it is always better to request assistance from outside (adjacent MOH, from the regional or central level, from NGOs) **early rather than being too late**. These resources include manpower (trained staff, PHI, PHM, labourers…), materials (tents, water bottles, food…) and money to purchase things locally and technical support.

Then based on these findings, the tentative

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action plan should be prepared and each activity should be delegated to the subordinates to carry out. Continuous monitoring the key interventions is always needed and shorten the time is taken to commence these initial interventions, higher the success. The findings of the rapid health assessments should be shared with the higher health authorities as well as the non-health sector. It helps to prevent duplication of work and getting the external support quicker.

When initial activities are established more detailed and systematic "in-depth assessment" can be initiated. The objective of this well-planned survey is to identify the damages in detail. Areas of interest would be damages to the health institutes, infrastructure, instruments etc. Recovery assessment includes the identification of details how well the victimized individuals could be settled back to their previous routine. Most of the time recovery assessments are carried out combining with other agencies.

Surveillance

This is the crucial step in controlling communicable diseases during a disaster. Early identification always opens up plenty of avenues to control communicable diseases. In contrast debt for the late identification could be immense and long-lasting due to reasons mentioned early. It is always advisable to strengthen the existing surveillance system prior to the anticipated disasters (eg. seasonal floods). By doing this process a clear idea can be gathered about the existing level of diseases in the field and later on it helps to identify an outbreak early. Usually, the routine surveillance may not work during a disaster and it is advisable to utilize multiple sources for the purpose.

These include frequent field visits, contacting the doctors who are treating in the camps and nearby hospitals where the affected people are being admitted and treated, talking with the camp leaders/health volunteers, maintaining rumour registers and lab surveillance. Furthermore preparation of writing pads for the visiting doctors with the list of possible communicable diseases on the side of it. At the end of the examination, the treating doctor expected to tick the relevant disease/s on his clinical judgment. At the end of each day, these forms can be collected at the pharmacist counter and easily identify the prevailing communicable diseases. (See the figure below)

A special set of surveillance forms (4) have been developed by the Epid Unit for the diseases surveillance during disaster situations. They have tested in the field during disasters and proven to be successful. The formats can be downloaded from http://epid.gov.lk/web/images/pdf/Circulars/Flood/floods_2017_05_29.pdf.   Usage of these formats not only improved the surveillance but also improved the timeliness. Daily reporting including nil returns and report on suspicion are the key features of this system. Epid Unit prepares a daily report and shared with the disaster management division of the Ministry of Health and other relevant authorities. Visualization of the communicable disease status following the disaster really helped to mobilize the required specific manpower to the needy places. However, the success of this system solely depends on the thorough supervision of the central / district and MOH level supervising staff.

References

D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: International Disaster Database

Editor

Table 1: Selected notifiable diseases reported by Medical Officers of Health   18th– 24th November 2017 (47th Week)

RDHS Division	Dengue Fever A	Dengue Fever B	Dysentery A	Dysentery B	Encephalitis A	Encephalitis B	Enteric Fever A	Enteric Fever B	Food Poisoning A	Food Poisoning B	Leptospirosis A	Leptospirosis B	Typhus Fever A	Typhus Fever B	Viral Hepatitis A	Viral Hepatitis B	Human Rabies A	Human Rabies B	Chickenpox A	Chickenpox B	Meningitis A	Meningitis B	Leishmaniasis A	Leishmaniasis B	WRCD T*	WRCD C**
Colombo	320	32672	6	65	0	3	0	30	3	41	5	162	0	3	2	18	0	0	10	351	0	28	0	1	22	84
Gampaha	234	30428	1	39	0	15	0	23	0	16	12	105	0	14	1	17	0	1	10	317	0	28	0	5	6	94
Kalutara	159	10415	1	58	0	4	0	21	1	54	23	388	1	10	1	22	0	1	6	492	0	144	0	1	1	96
Kandy	201	13451	0	71	0	5	0	8	0	20	2	55	0	125	1	16	0	2	8	248	2	39	1	16	16	100
Matale	58	2956	0	22	0	4	0	1	0	12	0	33	0	2	0	11	0	1	0	51	0	60	0	7	12	100
NuwaraEliya	8	853	0	31	0	9	1	36	0	53	1	54	0	179	0	21	0	0	2	310	0	45	0	0	63	100
Galle	109	5886	1	49	0	13	1	21	0	16	28	418	0	71	0	5	0	1	4	357	2	67	0	1	18	99
Hambantota	43	3397	0	26	0	7	0	8	0	31	2	58	3	70	0	10	0	1	4	207	0	19	26	410	11	100
Matara	47	6149	1	41	0	8	0	5	1	17	10	240	2	31	2	16	0	1	2	221	0	15	8	165	11	100
Jaffna	108	5163	7	407	1	23	2	45	0	58	0	31	6	482	0	3	0	0	8	196	2	38	0	0	43	87
Kilinochchi	15	486	1	37	0	1	0	12	0	1	0	4	0	17	0	2	0	0	0	3	0	11	0	3	23	100
Mannar	2	521	2	15	0	0	0	3	0	2	1	3	0	4	0	0	0	0	0	15	0	0	0	0	15	100
Vavuniya	19	932	0	24	0	0	3	86	0	7	0	27	0	11	0	7	0	0	1	37	0	4	0	10	13	100
Mullaitivu	5	354	2	18	0	4	0	9	1	5	1	22	0	4	0	2	0	0	0	17	0	5	3	3	9	100
Batticaloa	81	5050	5	171	1	10	1	16	1	43	1	25	0	1	0	6	0	1	0	166	0	34	0	1	23	100
Ampara	5	874	1	46	0	3	0	2	0	4	0	18	0	2	0	5	0	0	4	207	0	46	0	7	31	100
Trincomalee	29	4888	1	46	0	2	0	14	0	21	1	31	0	14	0	18	0	0	2	157	0	23	0	11	20	100
Kurunegala	185	10707	5	98	0	10	1	6	0	60	4	88	0	29	0	19	0	4	2	480	3	74	10	157	12	100
Puttalam	232	6706	3	61	0	2	0	2	0	18	0	29	0	11	0	1	0	1	2	153	0	45	0	3	13	100
Anuradhapur	53	2724	2	44	1	5	0	2	0	16	5	74	0	21	0	17	0	2	8	372	0	72	10	255	7	95
Polonnaruwa	20	1337	3	28	0	6	0	9	0	8	8	51	0	7	0	9	0	1	1	218	1	24	7	141	4	100
Badulla	39	3564	0	115	0	11	0	14	0	5	5	141	1	120	1	57	0	1	2	354	4	220	0	13	7	100
Monaragala	71	2953	4	81	2	3	6	1	6	17	3	136	0	123	0	20	0	1	2	101	2	70	1	30	31	100
Ratnapura	64	10990	6	168	2	85	0	13	0	9	16	580	1	32	0	77	0	0	4	278	1	146	0	22	11	100
Kegalle	68	9289	2	37	0	14	0	8	5	45	29	200	0	80	0	15	0	0	5	316	2	68	0	10	11	100
Kalmune	53	2563	2	102	0	7	0	4	0	290	0	10	0	0	0	3	0	0	6	148	0	36	0	0	13	100
SRILANKA	**2228**	**175308**	**56**	**1900**	**5**	**254**	**9**	**399**	**17**	**869**	**15**	**2983**	**14**	**1463**	**8**	**397**	**0**	**19**	**93**	**5772**	**19**	**1361**	**63**	**1272**	**17**	**97**

Source: esurveillance.epid.gov.lk

•T=Timeliness refers to returns received on or before 24thNovember., 2017 Total number of reporting units 344 Number of reporting units data provided for the current week: 339 **C****=Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP   18th– 24th November 2017 (47thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2017	Number of cases during same week in 2016	Total number of cases to date in 2017	Total number of cases to date in 2016	Difference between the number of cases to date in 2017 & 2016
	W	**C**	**S**	**N**	**E**	**NW**	**NC**	**U**	**Sab**					
AFP*	00	00	01	00	00	00	00	00	00	01	01	65	60	8.3%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	01	00	01	02	01	01	00	06	03	282	361	- 21.8%
Measles	01	00	01	00	01	00	00	00	00	03	04	188	363	- 48.2%
Rubella	00	00	00	00	00	00	00	00	00	00	01	10	10	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	01	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	16	10	60 %
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	25	18	38.8%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	19	64	- 70.3%
Tuberculosis	220	08	16	05	02	00	00	02	25	179	193	7660	8328	- 8.0%

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

Number of Malaria Cases Up to End of November 2017,
02
All are Imported!!!

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