



WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health

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Effective Vaccine Management (Part III)

This is the third in a series of four articles on effective vaccine management. Part I & II of this series were on the Storage of vaccines and safe injection equipment and Part III & IV are mainly focused on Transport of vaccines and safe injection equipments and Estimating vaccine and safe injection needs respectively.

Temperature monitoring

Monitoring the temperature in vaccine refrigerators

WHO advocates the use of new time-temperature devices (Data logger, Log tag etc) for continuous temperature recording. Temperature monitoring is not a spot check; it is a continuous process and with the introduction of these new time-temperature devices, you will have full data, even for the weekends and holidays.

Regular manual monitoring of temperature should be carried out in addition to electronic monitoring of temperature. For this purpose, a thermometer and a temperature chart is necessary.

To monitor the temperature, proceed as outlined below.

Set the refrigerator thermostat during the coldest part of the day to around +2 °C to +4 °C. Once the thermostat has been set, monitor temperatures first thing in the morning and before you leave the post in the afternoon/evening. This should be done every day. Record the time and temperature for the day in the chart. When a chart has been completed, replace it with a new one. Keep the completed charts in a record book for future reference with the signature of the superior officer. Take action when the temperature goes out of range and the reason for that and the corrective action taken should be mentioned in the temperature chart. The same should apply to the print outs of continuous temperature monitoring devices (Data logger, Log tag etc). If the temperature is between +2 °C and +8 °C, do not adjust the thermostat.

How to adjust the temperature of vaccine refrigerators

If the temperature is too **LOW** (below +2°C):

Turn the thermostat knob so that the arrow points to a lower number. This will make the refrigerator warmer. Check whether the door of the freezer closes

properly. The seal may be broken (this applies only to single door refrigerator).

Remember: Slight exposure to heat is less damaging than freezing.

If the temperature is too **HIGH** (above +8°C):
Make sure that the refrigerator is working. If not, check whether the power supply is in order.

Check whether the door of the refrigerator or the freezing compartment closes properly. The seal may be broken. Check whether frost is preventing cold air in the freezing compartment from entering the refrigerator compartment. Defrost if necessary (this applies only to single door refrigerators).

Turn the thermostat knob so that the arrow points to a higher number. This will make the refrigerator cooler.

If the temperature cannot be maintained between 2°C and 8°C, store vaccines in another place until the refrigerator is repaired.

Warning: Do **not** adjust thermostat to a higher (cooler) setting after a power cut. This could freeze the vaccines.

Do **not** adjust thermostat to a higher setting when new stock of vaccines arrive. This could freeze the vaccines.

Freeze-tag

Sri Lanka is currently using a freeze indicator called the Freeze-tagtm. It consists of an electronic temperature measuring circuit with associated LCD-display. If the indicator is exposed to a temperature below 0°C (± 0.3°C) for more than 60 minutes (± 3 minutes) the display will change from the “good” status into the “alarm” status as indicated on the picture below. The indicator is used to warn of freezing and has a shelf life is 5 years.

Keep all temperature monitoring equipment (Data logger, Log tag, Freeze-tag and thermometers) with freeze-sensitive vaccines in the refrigerator. In an upright (front-opening) refrigerator, keep them on the middle shelf, where the freeze-sensitive vaccines and diluents are kept. In a top-opening refrigerator, keep them in the basket in the middle of the refrigerator — **not by** the side wall, where freezing can occur.

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Transport of vaccines and safe injection equipments
Cold Boxes and Vaccine carriers

Figure 2 : Arranging ice packs in a vaccine carrier



Vaccine is OK

Do shake test



Figure 3 : Placing killed vaccine in a plastic container before placing inside the vaccine carrier

- Proper use of ice packs is essential for maintaining the potency of vaccines. You will need to be well organized to make sure you have enough ice packs available, especially in times of high need such as during supplementary immunization activities.
- Load vaccines into cold boxes and vaccine carriers as follows:
- Quickly take all the frozen ice packs you need from the freezer.
- You need to “condition” ice packs to prevent freeze-sensitive vaccines from freezing during transport. To “condition” an ice pack, keep it at room temperature until the ice within it melts.
- When you shake the ice pack and can hear the water inside, it is ready to be loaded into the cold box or vaccine carrier. The time this takes varies depending on the ambient temperature; it can take 20- 30 minutes.
- Put ice packs against each of the four sides of the cold box or vaccine carrier.
- Quickly take all live vaccines except JE and diluents you need from the refrigerator.
- Put the vaccines and diluents in the middle of the cold box or carrier. Vials may be kept in their boxes or packed without them, depending on how many vials you need (Figure 2)
- Do not let DPT, DT, aTd, TT and JE vaccine vials touch the ice packs. Pack these vaccine vials first in a plastic container and then place this container in the vaccine carrier (figures 3 & 4).
- Pack ice cubes in a waterproof plastic/polythene bag before placing them inside the vaccine carrier.
- Close the carrier lid tightly.



Figure 4: Placing killed vaccine inside the vaccine carrier



Compiled by Dr. Sudath Peiris-Assistant Epidemiologist

Source-Cold chain, vaccines and safe-injection equipment management

Available from whqlibdoc.who.int/hq/2008/WHO_IVB_08.01_eng.pdf

Table 1: Vaccine-preventable Diseases & AFP

05th - 11th May 2012 (19th Week)

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	00	01	00	00	00	00	00	01	01	03	02	32	30	+ 06.7 %
Diphtheria	00	00	00	00	00	00	00	00	00	-	-	-	-	-
Measles	00	00	00	00	00	00	00	00	00	00	03	20	51	- 60.8 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	04	08	- 50.0 %
Whooping Cough	00	00	02	00	00	00	00	00	00	00	00	32	15	+ 113.3 %
Tuberculosis	55	11	00	00	00	00	00	00	00	66	296	3196	3081	+ 06.1 %

Table 2: Newly Introduced Notifiable Disease

05th - 11th May 2012 (19th Week)

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	00	00	00	00	07	02	00	00	01	10	74	1943	1921	+ 01.1 %
Meningitis	00	01 KN=1	00	00	00	01 KN=1	00	00	02 RP=2	04	13	235	346	- 32.1 %
Mumps	00	00	01	00	22	01	00	00	01	25	42	1883	872	+ 115.9 %
Leishmaniasis	00	00	00	00	00	00	00	00	00	00	05	235	260	- 09.6 %

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

You have a duty and a responsibility in preventing dengue fever. Make sure that your environment is free from water collections where the dengue mosquito could breed.

Table 4: Selected notifiable diseases reported by Medical Officers of Health
05th - 11th May 2012 (19th Week)

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	0	2799	0	43	0	5	0	80	0	24	0	58	0	2	0	22	0	1	0
Gampaha	0	2197	0	31	0	5	0	32	0	13	0	77	0	6	0	101	0	0	0
Kalutara	0	788	0	35	0	2	0	17	0	3	0	92	0	2	0	9	0	1	0
Kandy	5	671	1	32	0	1	0	11	1	11	0	25	0	60	0	12	0	0	9
Matale	0	174	0	37	0	4	0	7	0	4	0	18	0	2	0	8	0	0	8
Nuwara	0	124	1	56	0	1	0	17	0	1	0	12	0	29	0	8	0	0	8
Galle	0	448	0	36	0	3	0	6	0	10	0	59	0	21	0	1	0	0	5
Hambantota	0	201	0	18	0	1	0	2	0	7	0	25	0	21	0	5	0	0	0
Matara	0	558	0	29	0	4	0	9	0	15	0	63	0	35	0	48	0	0	0
Jaffna	0	196	0	80	0	6	0	168	0	18	0	2	1	232	0	2	0	0	17
Kilinochchi	1	20	0	6	0	1	0	18	0	39	0	3	0	25	0	4	0	1	25
Mannar	0	69	0	10	0	2	0	13	0	13	0	15	0	35	0	1	0	0	0
Vavuniya	0	25	0	6	0	17	0	3	1	4	0	14	0	0	0	1	0	0	75
Mullaitivu	0	5	0	8	0	1	0	4	0	1	0	2	0	5	0	0	0	0	0
Batticaloa	8	518	1	50	0	1	0	10	9	24	0	4	0	0	0	4	0	1	43
Ampara	0	35	0	39	0	0	0	3	0	5	1	16	0	0	0	1	0	0	14
Trincomalee	3	80	3	66	0	1	0	15	0	1	2	22	0	3	1	2	0	0	17
Kurunegala	5	500	0	50	0	6	0	41	0	9	1	59	0	15	1	27	0	2	13
Puttalam	0	330	0	23	0	4	0	5	0	1	0	19	0	8	0	1	0	0	0
Anuradhapu	0	136	0	24	0	1	0	3	0	1	0	45	0	18	0	29	0	1	0
Polonnaruw	0	80	0	11	0	0	0	1	0	0	0	17	0	2	0	26	0	1	0
Badulla	0	86	0	30	0	2	0	14	0	1	0	16	0	24	0	18	0	0	0
Monaragala	0	72	0	28	0	4	0	9	0	0	0	36	0	37	0	86	0	0	0
Ratnapura	17	617	0	87	0	23	1	26	0	2	0	115	0	18	0	48	0	1	22
Kegalle	3	551	0	27	0	6	0	12	0	5	0	48	0	23	0	200	0	0	9
Kalmune	5	123	0	79	0	1	0	5	1	23	0	2	0	0	1	6	0	1	85
SRI LANKA	47	11403	06	941	00	102	01	531	12	235	04	864	01	623	03	670	00	10	12

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 11th May, 2012 Total number of reporting units 329. Number of reporting units data provided for the current week: 291

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

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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.

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