WEEKLY EPIDEMIOLOGICAL REPORT

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Maternal and Neonatal Tetanus Elimination

Tetanus is caused by the bacterium *Clostridium tetani*, the spores of which are widespread in the environment. The disease is caused by the action of a neurotoxin, produced by the bacteria when they grow in the absence of oxygen, e.g. in dirty wounds or in the umbilical cord if it is cut with a non-sterile instrument.

Tetanus is characterized by muscle spasms, initially in the jaw muscles. As the disease progresses, mild stimuli may trigger generalized tetanic seizure-like activity, which contributes to serious complications and eventually death unless supportive treatment is given.

Tetanus can be prevented by the administration of tetanus toxoid, which induces specific antitoxins. To prevent maternal and neonatal tetanus, tetanus toxoid needs to be given to the mother before or during pregnancy, and clean delivery and cord care needs to be ensured.

Elimination of Maternal and Neonatal Tetanus (MNT)

In many countries, deliveries take place in unhygienic conditions, putting mothers and their newborns at risk of a variety of life threatening infections. Maternal and neonatal tetanus have been among the most common lethal consequences of unclean deliveries and umbilical cord care practices. When tetanus develops, mortality rates are extremely high, especially when appropriate medical care is not available. And yet, maternal and neonatal tetanus deaths can be easily prevented by hygienic delivery and cord care practices, and/or by immunizing mothers with tetanus vaccine.

The MNT Elimination Initiative aims to reduce the number of maternal and neonatal tetanus cases to such low levels that MNT would no longer be a major public health problem. Unlike polio and smallpox, **tetanus cannot be eradicated** (tetanus spores are present in the environment worldwide), but through immunization of pregnant and child bearing age women and promotion of more hygienic deliveries, MNT can be eliminated. **MNT elimination level is defined as less than one case of neonatal tetanus per 1000 live births in every district of a country**.

In 1988, WHO estimated that 787,000 newborns died of neonatal tetanus (NT). Thus, in the late 1980s, the estimated annual global NT mortality rate was approximately 6.7 deaths per 1000 live births, clearly a substantial public health problem. WHO estimates that in 2008, 59,000 newborns died from NT, a 92% reduction from the situation in the late 1980s. The same year, 46 countries still had not eliminated MNT in all districts.

While progress continues to be made, by June 2010, 40 countries have not reached MNT elimination status. Activities to achieve the goal are ongoing.

The Maternal and Neonatal Tetanus Elimination Initiative was launched by UNICEF, WHO and UNFPA in 1999, revitalizing the goal of MNT elimination as a public health problem. Maternal tetanus is assumed to be eliminated once NT elimination has been achieved

Each organization within this partnership brings in its own field of expertise:

- **Countries**: implementation of recommended strategies
- **UNICEF**: coordination of accelerated activities and strengthening routine immunization to achieve and maintain MNT elimination
- **UNFPA**: promotion of clean deliveries
- **WHO**: monitoring and validation of elimination status, development of strategies for maintaining elimination and strengthening routine immunization

The strategies used for MNT elimination

The recommended strategies for achieving Maternal and Neonatal Tetanus (MNT) elimination include:

- In many countries, **immunization against tetanus is routinely given to pregnant women**, usually during antenatal care contacts. For women

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who have never received TT vaccine, or have no documentation of such immunization, a total of five doses is recommended: 2 doses given one month apart in the first pregnancy, then 1 dose in each subsequent pregnancy, to a total of five doses.

- In areas where immunization fails to reach a substantial proportion of pregnant women, TT SIAs may be required. This is known as the **"high-risk approach"**. All child-bearing aged women living in high risk districts (HRD) are targeted with 3 properly spaced doses of tetanus toxoid through specially organized supplementary immunization activities. This approach focuses on providing TT vaccination in districts where women have limited or no access to routine vaccination. HRDs are identified by systematic analysis of routinely reported district data and local knowledge

- **Clean deliveries (deliveries in health facilities and/or assisted by medically trained attendants)** effectively reduce MNT and other causes of maternal and neonatal mortality. Health workers who provide TT vaccination to women with limited access to routine services should encourage the use of trained health providers for obstetric care and also provide information about how to reach such services. If obstetric services are not available, extra efforts should be made to teach pregnant women how to ensure a clean delivery at home, the importance of not using harmful traditional substances for cord care, and when and where to seek care for complications.

- **Surveillance** on clean delivery practices, TT immunization coverage in each district and tetanus case load is a mandatory item in this regard. Surveillance should be carried out routinely.

Strategies for Maintaining MNT elimination

Complete eradication of tetanus is not possible because tetanus spores are found throughout the world in soil and stools of people and animals - that is, tetanus exposure cannot be completely prevented. Hence, countries that have succeeded in eliminating MNT must:

- Ensure that the majority of **pregnant women are immunized against tetanus** (at least >80%)
- Ensure high coverage with tetanus toxoid-containing vaccines in infancy (such as DTP), and consider introducing **child booster doses. School-based immunization** can be an efficient and effective strategy to deliver booster doses of tetanus-containing vaccines.
- Ensure access to and use of **clean delivery practices**

Maintain and improve **NT surveillance** to monitor continued elimination and identify areas where MNT is still occurring. Good NT surveillance permits effective targeting of interventions when necessary. NT surveillance can be quite challenging, it is nonetheless a key component of MNT elimination and serves as a valuable indicator of immunization and MCH system performance

Validating MNT elimination

Validation of MNT elimination is recommended once a country/district claims that it has achieved MNT elimination. The validation process consists of several components:

- **Review of district level data on NT surveillance, TT immunization and MCH services:** the data used are a series of core indicators (e.g. reported NT cases, TT coverage, institutional delivery coverage etc), complemented by additional indicators which can be country specific (DTP3, ANC attendance, urban/rural status, vacancy levels among health staff, women's literacy, etc). When recent relevant survey data are available, they also are used (e.g Demographic and Health Survey). The objective of the systematic district-level data review is to assess if elimination appears to have been achieved, and to identify districts with weak performance.

- **Field visit:** when the data review alone does not permit a conclusion on elimination status, field visits to districts with weak performance may be indicated. Field visits typically include evaluations of health facilities where records are reviewed and health workers and women are interviewed.

- **Validation survey:** if a decision cannot be reached about the MNT elimination status of a country following the district data review (and field visits, when performed), a specific MNT elimination validation survey is conducted. The recommended community-based survey method uses a combination of lot quality assurance (LQA) and cluster sampling (CS) techniques to judge whether the neonatal tetanus mortality rate (NTMR) is probably greater than 1 NT death/1000 live births (elimination not achieved) or not (elimination achieved). The LQA-CS survey is carried out in the districts thought to be the most poorly performing in the country. The logic is that if NT elimination can be validated in the weakest districts, elimination can be assumed in the better performing districts, and therefore in the country as a whole.

Long-term plan for sustaining MNT elimination: if the outcome of the process outlined above is that neonatal tetanus has not been eliminated, the country/district under evaluation must review its strategies and implement additional activities as appropriate. If, on the other hand, elimination has been achieved, strategies need to be adjusted to sustain the progress. These can include, but are not limited to, school-based booster doses of tetanus toxoid-containing vaccines and/or immunization of new cohorts of child-bearing age women with TT, increasing access to health facility deliveries, etc. Plans for sustaining MNT elimination should be included in the comprehensive multiyear plan (cMYP) for immunization.

Sri Lankan Situation

According to the available history immunization against tetanus has started in 1961 and its coverage was expanded in more methodical manner with the initiation of the Expanded Programme on Immunization (EPI) in 1978. From 1961 onwards case load of tetanus patients began to come down and currently we hardly see cases of tetanus.

From year 1995 Sri Lanka is maintaining less than 1 case of neonatal tetanus per 1000 live births which is less than the MNT elimination level. This has been achieved by the hard work done at field level by Medical Officers of Health, Public Health Midwives and Public Health Inspectors, supported by the strong coordination done by the district level officers and strong advocacy by the curative sector physicians. With the government policies on free health and education for all and strong health infrastructure paved the path for achieving this massive success.

As a country, now Sri Lanka faces the task of maintaining the achieved MNT elimination status by keeping the high coverage of tetanus immunization in the midst of negative attitudes on immunization by some young health workers who may have never seen a patient with tetanus but experiencing more and more Adverse Events Following Immunization. Therefore, it is our duty to carry the pro flag of the immunization way forward to protect our children and children of theirs from the suffering created by tetanus.

Source : World Health Organization

Table 1: Vaccine-preventable Diseases & AFP

24th - 30th July 2010(30th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2010	Number of cases during same week in 2009	Total number of cases to date in 2010	Total number of cases to date in 2009	Difference between the number of cases to date in 2010 & 2009
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	03	00	00	00	00	00	00	01	00	04	03	56	47	+ 19.1 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	-
Measles	01	01	00	00	00	00	00	00	00	02	03	59	64	- 07.8 %
Tetanus	00	00	00	00	00	00	00	00	00	00	01	15	21	- 28.6 %
Whooping Cough	00	01	00	00	00	00	00	00	00	01	00	18	24	- 25.0 %
Tuberculosis	38	12	00	09	12	22	05	30	22	150	67	4982	5665	- 12.1 %

Table 2: Newly Introduced Notifiable Disease

24th - 30th July 2010(30th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2010	Number of cases during same week in 2009	Total number of cases to date in 2010	Total number of cases to date in 2009	Difference between the number of cases to date in 2010 & 2009
	W	C	S	N	E	NW	NC	U	Sab					
Chickenpox	01	02	03	02	04	04	07	01	07	31	49	2080	10972	- 81.0 %
Meningitis	03 CB=3	03 NE=2 ML=1	02 GL=2	00	02 KM=2	03 KN=1 PU=2	00	01 BD=1	02 KG=2	16	08	1078	599	+ 80.0 %
Mumps	00	00	01	00	01	01	06	04	04	17	23	620	1116	- 44.4 %
Leishmaniasis	00	00	00	00	00	02 KN=1 PU=1	05 AP=5	00	00	07	06	173	473	- 63.4 %

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

Reduce, Reuse or Recycle the plastic and polythene collected in your home and help to minimize dengue mosquito breeding.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

24th - 30th July 2010(30th 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	223	3988	4	195	0	14	2	47	0	29	4	371	1	7	0	37	0	1	**69**
Gampaha	63	2890	4	104	0	18	0	29	0	17	6	245	0	8	1	63	0	4	**60**
Kalutara	66	1312	6	153	1	12	0	15	0	73	5	212	0	2	1	23	0	1	**67**
Kandy	65	1150	7	221	2	3	0	20	0	4	1	66	1	100	1	40	0	1	**96**
Matale	18	481	3	228	0	3	0	24	0	68	0	67	0	4	1	32	0	0	**75**
Nuwara	6	132	5	259	0	0	2	88	0	84	4	21	0	49	0	27	0	0	**92**
Galle	36	751	12	175	0	3	2	5	0	12	0	57	4	15	1	8	0	3	**89**
Hambant	35	570	0	54	0	4	0	1	0	10	0	66	2	60	1	7	0	0	**91**
Matara	33	383	4	124	0	6	0	5	3	46	2	195	6	97	1	16	0	0	**100**
Jaffna	29	2534	1	183	0	3	9	414	0	8	0	1	0	108	0	46	0	2	**75**
Kili-	2	8	4	9	0	0	0	5	0	1	0	0	0	0	0	0	0	0	**50**
Mannar	22	236	2	34	1	1	1	35	0	10	0	0	0	0	0	15	0	0	**60**
Vavuniya	5	532	2	30	0	2	0	38	0	8	0	2	0	1	0	10	0	1	**75**
Mullaitivu	0	3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	**20**
Batticaloa	11	1126	2	107	0	3	0	17	0	30	0	10	0	2	0	4	0	2	**93**
Ampara	10	107	0	60	0	1	0	6	0	6	0	30	0	0	0	10	0	0	**29**
Trincomal	8	868	2	111	0	12	0	4	1	11	0	18	0	12	0	13	0	1	**80**
Kurunega	46	1021	4	205	0	15	2	27	0	9	2	225	0	35	1	80	0	3	**100**
Puttalam	26	804	6	87	0	6	2	42	0	124	1	59	0	0	0	20	0	1	**89**
Anuradha	21	857	1	46	0	4	1	9	0	37	0	56	0	22	0	33	0	3	**79**
Polonnar	5	326	2	59	0	1	0	5	0	8	1	50	0	1	0	33	0	0	**100**
Badulla	63	741	2	130	0	1	1	64	0	16	2	48	0	62	0	79	0	0	**67**
Monaraga	50	659	0	122	0	1	1	30	0	4	0	27	2	49	1	61	0	2	**91**
Ratnapur	56	1872	2	343	0	4	0	10	0	26	4	272	1	43	2	68	0	2	**78**
Kegalle	32	678	3	98	1	11	2	41	0	19	8	170	0	12	1	62	0	0	**91**
Kalmunai	3	491	8	165	0	2	0	5	1	3	0	0	0	0	0	11	0	1	**62**
SRI LANKA	**934**	**24520**	**86**	**3306**	**05**	**130**	**25**	**987**	**05**	**663**	**40**	**2268**	**17**	**689**	**13**	**798**	**00**	**28**	**80**

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 30th July, 2010 Total number of reporting units =311. Number of reporting units data provided for the current week: 257
A = Cases reported during the current week. B = Cumulative cases for the year.

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