WEEKLY EPIDEMIOLOGICAL REPORT

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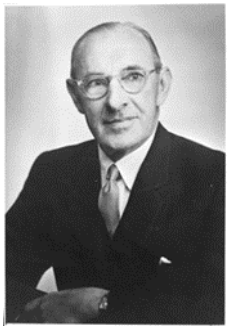
Congenital rubella syndrome (CRS) Part I

This is the first of a series of articles on Congenital rubella syndrome (CRS)

Illness in infants as a result of maternal infection with rubella during pregnancy is termed as Congenital Rubella syndrome (CRS). Miscarriages, stillbirths, and a sequence of severe birth defects in infants can result in the case of occurrence of rubella during early pregnancy. In some low and middle-income countries widespread epidemics are still experienced despite extensive worldwide vaccination efforts.

Historical Facts



Australian ophthalmologist, Norman McAlister Gregg (1892-1966), discovered a link between rubella infection in 1941 of a woman during pregnancy and her baby suffering from severe birth defects. The findings were astonishing as rubella is believed to be nothing more than a mild childhood illness with a rash and swollen gland. The epidemic of Rubella from 1939 in crowded army camps in Australia helped to find the link between Rubella, cataract and congenital heart diseases.

The rubella virus was isolated in 1961 which helped to develop a live attenuated rubella vaccine in 1969 by the prolific vaccine researcher Maurice Hilleman. Hilleman's rubella vaccine was used in the combination of the measles-mumps-rubella (MMR) vaccine, which was licensed in 1971. In 1979, an improved live rubella vaccine developed by Stanley A. Plotkin superseded Hilleman's that was used in Europe for years and offered superior protection against the disease.

As Rubella was initially recognized in Germany in 1814 and speculated to be a variant of measles it was also known as German measles.

Epidemiology

During the 1962 to 1965 period, the world experienced a global rubella pandemic which intensified the attention on identification of the correlation of Rubella virus with CRS global attention leading to the devel-

Contents **Page**

opment of a preventive vaccine in the late 1960s.

Rubella is described as a periodic disease with epidemics developing every 5 to 9 years. The incidence varies from 0.8 to 4/1000 live births during epidemics to 0.1–0.2/1000 live births during non-epidemic periods according to surveillance detected cases.

In 1996 CRS was estimated to have affected 22 000 babies in Africa, 46 000 in South-East Asia and nearly 13 000 in the Western Pacific. As only 83 Member States of the World Health Organization (WHO) had introduced rubella-containing vaccine (RCV) which would have caused this burden, a significant reduction of the disease burden of rubella and CRS was not expected over the period 1996 to 2008 as very few countries had introduced RCV to their immunization schedules.

Introduction of RCV into their national immunization schedule was done by 130 WHO Member States by the end of 2009, which included four of the 11 Member States in the WHO South-East Asia Region. The resolution SEA/RC66/R5, which was the goal of eliminating measles and achieving control of rubella/CRS by 2020 for South East Asia was adopted in September 2013, by the WHO Regional Committee. To achieve this goal the South-East Asia Regional Immunization Technical Advisory Group (SEAR-ITAG) formulated a programme for the countries of the region in 2014. This comprised of constructing laboratory capacity, establishing a structure for case-based reporting, and enforcing data-feedback mechanisms.

Causes

The pregnant mother getting infected with rubella can pass it on to her unborn child/foetus through blood. This will cause congenital rubella syndrome in the child. Rubivirus which causes rubella is a single-stranded, positive-sense RNA virus. This is the only member of the genus within the Togaviridae family. This has only one serotype that can survive and replicate stably. This rubivirus causes the most damage to a developing foetus during the first trimester. Therefore after the fourth-month harm to the foetus by the mother`s rubella infection is less likely.

Compiled by – Dr.T.D.Haputhanthri
Epidemiology unit

Table 1 : Water Quality Surveillance
Number of microbiological water samples April 2019

District	MOH areas	No: Expected *	No: Received
Colombo	15	90	**21**
Gampaha	15	90	**NR**
Kalutara	12	72	**NR**
Kalutara NIHS	2	12	**02**
Kandy	23	138	**NR**
Matale	13	78	**NR**
Nuwara Eliya	13	78	**81**
Galle	20	120	**NR**
Matara	17	102	**104**
Hambantota	12	72	**33**
Jaffna	12	72	**113**
Kilinochchi	4	24	**30**
Manner	5	30	**NR**
Vavuniya	4	24	**NR**
Mullatvu	5	30	**NR**
Batticaloa	14	84	**67**
Ampara	7	42	**NR**
Trincomalee	11	66	**32**
Kurunegala	29	174	**NR**
Puttalam	13	78	**66**
Anuradhapura	19	114	**21**
Polonnaruwa	7	42	**187**
Badulla	16	96	**89**
Moneragala	11	66	**109**
Rathnapura	18	108	**NR**
Kegalle	11	66	**18**
Kalmunai	13	78	**36**

* No of samples expected (6 / MOH area / Month)
NR = Return not received

to be continued ...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 11th – 17th May 2019 (20th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmania-sis		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	192	3914	2	20	0	3	2	7	0	22	6	82	0	7	0	5	0	0	9	219	2	25	0	2	**48**	**100**
Gampaha	121	2478	1	10	0	1	0	3	0	15	3	46	0	2	0	1	0	1	18	196	0	11	14	57	**51**	**100**
Kalutara	54	1225	0	34	0	4	1	7	0	31	5	232	0	3	1	4	0	0	9	333	0	55	0	3	**61**	**99**
Kandy	45	1118	4	37	2	7	0	1	0	10	1	31	1	41	0	2	0	1	12	132	4	27	2	17	**64**	**100**
Matale	5	212	3	14	1	3	0	0	0	2	3	27	0	4	0	3	0	1	4	42	0	3	4	113	**55**	**99**
NuwaraEliya	6	72	4	39	0	1	0	4	0	0	1	16	5	35	0	4	0	0	9	42	1	23	0	0	**26**	**100**
Galle	133	881	0	26	0	4	0	3	0	4	12	147	1	21	0	4	0	0	12	195	1	30	0	2	**63**	**97**
Hambantota	15	456	0	3	0	1	0	0	0	5	0	45	2	70	0	1	0	1	12	178	0	17	19	351	**73**	**100**
Matara	18	629	0	5	0	4	0	1	3	6	6	122	2	17	0	10	0	0	6	140	0	4	12	245	**60**	**100**
Jaffna	30	1865	7	75	1	6	0	12	3	17	1	22	2	255	1	3	0	0	6	136	1	8	0	0	**26**	**93**
Kilinochchi	1	89	0	8	0	1	0	9	0	0	0	17	0	23	0	1	0	0	0	3	0	3	0	7	**48**	**100**
Mannar	2	71	0	2	0	1	0	7	0	1	0	1	1	8	0	0	0	0	0	0	0	0	0	1	**48**	**99**
Vavuniya	4	166	0	6	2	8	2	19	0	3	3	39	0	4	0	0	0	0	3	50	0	8	0	1	**54**	**100**
Mullaitivu	0	91	0	6	0	0	0	4	0	2	0	11	0	6	0	0	0	0	0	0	0	2	0	2	**30**	**85**
Batticaloa	20	794	0	45	2	2	0	10	0	4	3	26	0	1	0	0	0	1	9	125	1	10	0	0	**53**	**99**
Ampara	3	98	1	12	0	2	0	0	0	4	1	19	0	1	0	9	0	0	7	87	1	6	0	4	**56**	**100**
Trincomalee	12	561	0	8	0	0	0	0	0	8	2	5	0	3	0	1	0	0	3	99	0	4	0	1	**37**	**81**
Kurunegala	14	690	1	29	0	6	0	4	0	14	5	91	1	11	0	13	0	0	15	335	4	37	19	372	**58**	**100**
Puttalam	7	241	0	14	0	2	0	1	0	1	1	17	0	8	0	1	0	0	4	89	1	24	0	5	**62**	**100**
Anuradhapura	1	216	3	16	0	5	0	3	0	3	3	81	0	24	0	14	0	1	15	305	1	45	2	237	**41**	**97**
Polonnaruwa	5	121	5	12	0	2	0	1	0	0	2	37	0	3	0	13	0	0	10	169	1	12	5	120	**61**	**100**
Badulla	9	289	3	29	0	3	0	5	0	56	0	83	2	49	0	13	0	0	8	142	10	92	0	10	**66**	**100**
Monaragala	3	201	0	28	0	3	0	0	0	77	3	142	3	55	1	34	0	0	8	144	5	78	1	10	**63**	**100**
Ratnapura	30	833	5	45	0	21	0	6	1	11	24	310	1	19	2	12	1	4	5	194	2	73	3	68	**45**	**100**
Kegalle	13	513	0	20	0	11	0	0	1	21	9	76	0	21	1	74	0	0	12	233	1	17	1	17	**65**	**100**
Kalmune	17	452	0	21	0	0	0	1	2	9	0	19	0	2	0	1	0	0	5	111	1	14	0	0	**62**	**100**
SRILANKA	**760**	**18276**	**39**	**564**	**8**	**101**	**5**	**108**	**10**	**326**	**94**	**1744**	**21**	**693**	**6**	**223**	**1**	**10**	**201**	**3699**	**37**	**628**	**82**	**1645**	**55**	**98**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 17th May , 2019 Total number of reporting units 353 Number of reporting units data provided for the current week: 330 C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

11th – 17th May 2019 (20th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2019	Number of cases during same week in 2018	Total number of cases to date in 2019	Total number of cases to date in 2018	Difference between the number of cases to date in 2019 & 2018
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	01	00	00	00	00	00	00	01	00	35	21	66.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	00	00	01	00	00	01	01	03	04	154	149	3.3 %
Measles	02	02	15	02	01	00	00	01	01	24	02	114	54	111.1 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	04	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	06	11	- 45 %
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	09	15	- 40 %
Whooping Cough	00	01	01	00	00	00	00	00	00	02	01	29	17	70.5 %
Tuberculosis	99	09	18	07	10	01	06	16	16	182	206	3219	3172	1.4 %

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.

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

Influenza Surveillance in Sentinel Hospitals - ILI & SARI

Month	Human				Animal		
	No Total	No Positive	Infl A	Infl B	Pooled samples	Serum Samples	Positives
May	131	29	24	5			

Source: Medical Research Institute & Veterinary Research Institute

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