WEEKLY EPIDEMIOLOGICAL REPORT

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Hepatitis B – Vaccination Strategy – Success Path for Elimination Part I

This is the first in a series of two articles on Hepatitis B – Vaccination Strategy Success Path for Elimination

Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease. It ranges in severity from a mild illness, lasting a few weeks to long term serious and chronic illness. It is estimated that 2.0% of the general population is infected in the WHO South-East Asia Region.[1] Serological surveys carried out in Sri Lanka have found the presence of HBV from 0.1 – 2.5% in the community before the introduction of the Hepatitis B vaccine.[2,3] Sri Lanka, therefore, remains unique among developing countries as being considered a low endemic country for HBV infection in comparison to some of its neighbours such as India and Bangladesh.[4] Fewer number of injecting drug addicts in the country, improved safety practices in relation to disposable IV infusion sets and syringes in hospitals and vaccination clinics, enhanced screening of blood and blood products at blood banks and the high coverage of Hepatitis B vaccination in the country can be considered as the significant contributors to this low prevalence. Viral hepatitis has in recent years been recognized as a global health and development priority with its inclusion as a focus area in the health-related goal – Goal 3.3 of the Sustainable Development Goals (SDGs), with world leaders pledging to 'combat' it by 2030.

Transmission – can occur in a variety of ways -

- Sexual transmission among persons with multiple sex partners or unvaccinated men who have sex with men (MSM) and sex workers are also at high risk.
- Spread from mother to child at birth (perinatal transmission) – especially in high endemic areas.
- Horizontal transmission – exposure to infected blood especially among close or household contacts.
- Via needle stick injury, tattooing, piercing, exposure to infected blood and body fluids (saliva, menstrual, vaginal and seminal fluids).

While modes of transmission are the same for HIV; HBV (Hepatitis B virus) is 50 to 100 times more infectious. In addition, HBV can survive outside the body for at least 7 days. The virus incubation period is on average - 90 days (can vary

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from 30 to 180 days).

Clinical Features of the disease

Outcomes of HBV infection include asymptomatic infection, acute HBV infection, chronic HBV infection, cirrhosis and hepatocellular carcinoma (HCC). Acute hepatitis B occurs in around 1% of perinatal infections, 10% of early childhood infections (1-5 years of age) and 30% of late infections (people aged >5years). Fulminant hepatitis can occur in 0.1-0.6% of acute hepatitis cases with mortality from fulminant hepatitis B approximately 70%. Development of chronic HBV infection is inversely related to the age of acquisition leading to chronic infections in 80-90% of people infected perinatally, 30-50% in children infected <6 years of age, and <5% in otherwise healthy adults. There is also a 15-25% risk of premature death from HBV-related cirrhosis and HCC among people with chronic HBV infection.[1,4]

Most people do not experience symptoms when newly infected. However, some people demonstrate acute illness with symptoms that last several weeks such as jaundice, dark urine, extreme fatigue, nausea, vomiting and abdominal pain. A small subset of persons with an acute infection can develop acute liver failure and can lead to death. Similarly, chronic liver infection due to hepatitis B virus can later develop into cirrhosis or liver cancer in some people. Around 1% of persons living with HBV infection are also infected with HIV.[1]

Surveillance and Diagnosis

Under the notification system in Sri Lanka, hepatitis B is a notifiable disease with surveillance case definition as follows: “Acute illness including acute jaundice, dark urine, anorexia, malaise, extreme fatigue and right upper quadrant tenderness”.[5]
It is difficult to distinguish hepatitis B from hepatitis due to other viral agents; therefore, laboratory confirmation is essential for diagnosis.

Case classification of Hepatitis B requires a suspected case to be **laboratory confirmed via demonstration of Hepatitis B surface antigen (HBsAg) or HBc antigen IgM in a serum sample.** Of importance to note is that the anti-HBc IgM test is specific for acute infection and rarely positive in chronic HBV infection; and also, not available in most countries. On the other hand, HBsAg which is often available, cannot distinguish between acute recent infections and exacerbations of chronic hepatitis B. However, continued HBsAg seropositivity (>6 months) is an indicator of carrier stage.[2] Persistence of HBsAg is the principal marker of risk for developing chronic disease and HCC later in life. Presence of HBeAg indicates that the blood and body fluids of the infected individual are highly contagious.[4]

Treatment of Hepatitis B infection

There is currently no specific treatment for acute hepatitis B infection. Treatment is mainly geared towards adequate nutritional balance and fluid replacement (lost from vomiting and diarrhoea). Chronic hepatitis B infection can be treated with medicines such as antiviral agents. Use of oral drugs such as tenofovir or entecavir is recommended by the WHO to suppress the hepatitis B virus.[1] Treatment does not cure hepatitis B infection but only suppresses the replication of the virus so some people would have to be on lifelong treatment.
Long term complications of the infection such as cirrhosis and HCC have limited treatment options. In low-income settings, most people with liver cancer die within months of diagnosis. High-income countries usually offer surgery or chemotherapy to prolong life in such cases. Liver transplantation has also been used with varying success. Therefore, prevention of hepatitis B infection remains important with vaccination as the most effective strategy for prevention.

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 to be continued ...

Table 1: Selected notifiable diseases reported by Medical Officers of Health 27th– 03rd July 2020 (27th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		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	50	3239	3	17	0	6	0	4	0	14	11	183	0	1	1	3	0	0	4	178	4	25	1	2	**57**	**99**
Gampaha	43	1986	0	7	1	2	0	5	0	19	7	140	0	1	0	4	0	0	4	222	2	15	0	38	**45**	**99**
Kalutara	49	1377	1	8	0	4	0	4	0	4	18	425	0	13	0	3	0	0	0	240	3	29	0	0	**45**	**85**
Kandy	130	1923	1	17	0	1	1	8	0	10	8	129	5	72	0	4	0	0	6	136	1	19	2	47	**64**	**100**
Matale	10	493	0	5	0	3	1	3	0	6	5	67	0	4	1	5	0	1	0	45	0	2	4	191	**65**	**99**
NuwaraEliya	2	137	0	15	0	1	0	1	0	7	5	60	1	62	0	3	0	0	1	66	0	9	0	0	**23**	**100**
Galle	12	1108	0	13	1	9	0	2	0	12	4	244	0	26	0	2	0	0	2	213	0	20	0	2	**55**	**63**
Hambantota	6	296	0	7	2	4	0	2	0	38	5	139	1	30	0	2	0	0	3	150	5	28	17	365	**68**	**100**
Matara	0	352	0	9	0	3	0	0	0	0	1	102	0	4	0	6	0	0	1	69	1	6	0	117	**46**	**39**
Jaffna	16	1929	3	59	0	0	0	19	0	20	1	18	11	476	0	0	0	1	4	89	0	7	0	0	**32**	**93**
Kilinochchi	0	116	2	32	0	2	0	10	1	11	1	17	1	25	0	1	0	0	0	12	0	9	0	10	**65**	**100**
Mannar	3	125	0	0	0	0	0	1	2	2	0	5	0	1	0	0	0	0	0	2	1	4	0	0	**41**	**100**
Vavuniya	1	240	0	9	0	0	0	5	0	2	1	38	0	1	0	0	0	0	0	29	0	4	0	1	**68**	**100**
Mullaitivu	1	79	0	5	0	0	0	6	0	2	3	19	0	6	0	2	0	2	0	8	0	4	0	6	**39**	**96**
Batticaloa	17	2216	3	57	0	3	0	1	0	44	1	24	0	0	0	4	0	1	1	74	1	17	0	1	**51**	**100**
Ampara	1	299	0	12	0	2	0	0	0	0	0	77	0	0	0	1	0	0	4	97	0	13	0	4	**68**	**100**
Trincomalee	1	2251	0	12	0	0	0	0	0	2	0	25	0	4	0	0	0	0	1	81	0	8	0	0	**47**	**91**
Kurunegala	8	743	1	13	2	6	0	2	1	36	6	142	1	20	0	4	0	2	4	273	2	19	16	271	**47**	**99**
Puttalam	7	400	0	8	0	4	0	3	0	1	0	45	0	13	0	0	0	1	0	70	1	35	0	4	**59**	**100**
Anuradhapur	3	366	0	16	0	1	0	4	0	23	4	184	0	15	1	7	0	1	1	158	3	33	2	126	**43**	**96**
Polonnaruwa	4	214	0	5	0	0	0	0	0	5	2	110	0	0	0	15	0	1	0	109	0	11	6	149	**65**	**92**
Badulla	3	411	0	12	0	4	0	3	0	3	10	215	2	55	0	11	0	0	2	125	0	26	1	14	**60**	**100**
Monaragala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ratnapura	108	1347	3	56	6	21	0	5	0	24	25	1008	3	26	0	13	0	0	3	149	3	75	9	75	**50**	**100**
Kegalle	25	570	0	15	1	5	0	3	0	16	16	273	1	33	0	6	0	0	2	135	1	30	1	18	**59**	**99**
Kalmune	4	859	1	37	0	3	0	0	1	2	0	13	0	2	0	2	0	0	2	265	1	32	0	0	**70**	**100**
SRILANKA	**504**	**23076**	**18**	**446**	**1**	**84**	**2**	**91**	**5**	**303**	**13**	**3702**	**26**	**890**	**3**	**98**	**0**	**10**	**45**	**2995**	**29**	**480**	**59**	**1441**	**54**	**90**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 03 rd July , 2020 Total number of reporting units 356 Number of reporting units data provided for the current week: 287 **C****-Completeness

Table 2: Vaccine-Preventable Diseases & AFP

27th– 03rd July 2020 (27th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2020	Number of cases during same week in 2019	Total number of cases to date in 2020	Total number of cases to date in 2019	Difference between the number of cases to date in 2020 & 2019
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	01	00	00	00	00	00	00	01	01	20	44	- 54.5 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	01	01	01	00	00	00	00	00	00	03	03	99	190	- 47.8 %
Measles	00	00	00	00	00	00	00	00	00	00	07	31	184	- 83.1 %
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	01	03	11	- 72.7 %
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	02	00	02	00	25	09	177.7 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	01	05	34	- 85.2 %
Tuberculosis	86	07	05	11	05	12	04	10	10	160	92	2713	4406	- 38.4 %

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

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them free of water collection.

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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