



WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

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Enhancing public health security at points of entry (PoE) to Sri Lanka (Part I)

This is the first in a series of three articles on enhancing public health security at points of entry (PoE) to Sri Lanka

Global public health security

Infectious disease pandemics, radio-nuclear or toxic industrial accidents, conflicts and natural disasters have emerged as threats to global public health security during the past few decades. World Health Organization (WHO) defines global public health security in its 2007 World Health Report as the “activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries”. Lack of global public health security, has an impact on economic and political stability, trade, tourism, and, even on demographic stability.

Increased international air travel, with 1 billion people crossing international borders each year, has caused spread of infectious disease across the globe faster and farther. The speed of spread of disease through aircrafts is best illustrated by the outbreaks of SARS in 2003 and Influenza A in 2009; similarly round 50,000 merchant ships manned by over one million seafarers, carrying cargo across 150 countries, could spread infectious diseases through sea ports. The complex dynamics of an ever increasing international migration flow, in the present day emphasize the need to strengthen the points of entry (PoE) (airports, seaports, ground crossings) to prevent the international spread of infectious diseases, one of the major threats to the global public health security.

International health quarantine

International health quarantine first appeared in the 14th Century, With the development of foreign trade, increasing naval transportation and newly-explored shipping routes. Infectious diseases like plague, cholera swept through Europe, and spread out. Europe experienced the most deadly infectious disease outbreak in the history when the Black Death, the infamous pandemic of bubonic plague, hit in 1347, killing a third of the human population. To prevent the spread of these diseases, some countries adopted quarantine of ships which came from epidemic areas. Thus the term “quarantine” dates back to the 14th century when people arriving from plague-infected areas to the port of Ragusa were isolated. This period of isolation was set at 40 days and the word quarantine derived from the word “quaranta” the Italian term for “forty”. By the end of the 19th century, many international conferences on disease control had been held, focusing on the containment of epidemics within their regions of origin.

International Health Regulations

The first International Sanitary Convention of 1892, became the International Sanitary Regulations. Through many revisions, in 1951, WHO adopted the existing conventions at that time as the International Sanitary Regulations, which became binding on WHO member states. However, international sanitary regulations of 1951 highlighted that measures at PoE alone could prevent the spread of infectious diseases across international borders. It intended to monitor and control only 6 serious infectious diseases: These Sanitary Regulations of 1951 were renamed as the International Health Regulations (IHR) in 1969.

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However, over time, compliance with the regulations diminished, and the global surveillance system under the IHR 1969 gradually faded, diminished in relevance and effectiveness. With the threat of emerging and re-emerging infectious diseases such as Ebola virus in Congo and the epidemic of Plague in India in the 1990's, the inadequacy of mechanisms available for controlling the cross-border outbreaks were recognised, resulting in a resolution at the World Health Assembly in 1995. This resolution was to revise the International Health Regulations of 1969, to help in global governance of disease reporting and responses. Yet there was only little progress until the emergence of the SARS virus in 2003, which led to a revised IHR to be adopted by the World Health Assembly in 2005, which came into force in 2007.

The IHR (2005) has shifted the focus of infectious disease in 3 ways: It is not limited to any specific diseases, and covers all public health emergencies. It also replaced the historical lists of notifiable diseases with an algorithm. The 'control at borders' was supplemented by 'containment at the source', and used 'adapted response' based on real-time epidemiological evidence rather than 'pre-determined' measures.

The goal of the IHR is the global public health security and to prevent the spread of diseases and events across international borders. The IHR is a set of legally binding regulations, for the WHO member states. It provides a global framework agreed upon by the member states, for the collective international management of epidemics and other public health emergencies, while minimizing disruption to travel, trade and economies, and at the same time respecting individual human rights. Countries have agreed to share information promptly and to develop and sustain the core capacities needed. This commitment laid the foundation for a global disease detection and response network, capable of containing emerging disease threats. The implementation of IHR (2005) requires mobilization of national resources for strengthening the national capacity for early detection of unusual diseases or events by effective national surveillance and for response (investigation, control measures) at all levels (local, regional, and national).

The IHR (2005) identifies several public health hazards: biological (infectious, zoonotic, food born), chemical and radioactive material which may cause an international public health emergency. They can be manifested as imported human cases, infected or contaminated vectors or contaminated goods. The international response required today is not only to the known, but also to the unknown diseases that may arise.

There are numerous examples where infectious diseases and events have spread across the globe causing great adverse health, economic and social consequences. There was no better eye opener to the world than India in 1994, of the risk of re-emergence of infectious diseases (plague). The international media attention given resulted in devastating economic consequences for India, several countries over-reacted exceeding the measures in IHR (1969) and imposed unnecessary travel and trade restrictions.

The outbreak of SARS in 2003 caused 8098 cases and 774 deaths in 26 countries and showed the world how quickly a new disease can spread along the routes of international air travel. Spread through aircrafts covers a long-range geographically; infectious diseases are mostly in latency and patients are difficult to be discovered and controlled; sources of travellers are various, therefore differences in languages, cultures, lifestyles and religious beliefs have certain effects on the spread of diseases.

Ebola virus disease (EVD) is among the most virulent pathogens known to infect humans and require containment at their source, due to their acute nature and the resultant fatality. The first Ebola virus disease (EVD) outbreaks occurred in 1976 in remote villages in Central Africa. The current outbreak in West Africa, first reported in March 2014, is the largest and most complex outbreak since the Ebola virus was first discovered. It has also spread between countries starting in Guinea then spreading across land borders to Sierra Leone and Liberia, by air to Nigeria and USA, and by land to Senegal and Mali.

Compiled by Dr. Vindya Kumarapeli

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 21st - 27th Nov 2015 (48th 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	258	8526	3	176	0	15	3	100	2	123	7	304	0	10	2	47	0	4	2	450	0	43	1	1	81	19
Gampaha	60	3565	3	87	0	12	1	34	0	32	5	401	0	11	2	134	0	0	8	291	2	34	0	2	53	47
Kalutara	38	1342	3	113	0	8	1	57	0	153	19	396	0	6	0	36	0	3	4	276	1	58	0	0	69	31
Kandy	25	1154	2	146	0	6	0	31	4	63	3	119	2	72	4	142	0	0	0	228	2	28	0	17	87	13
Matale	2	371	1	41	0	2	0	10	4	13	0	59	0	9	0	30	0	0	0	31	2	43	1	29	46	54
NuwaraEliya	5	453	0	317	0	4	1	33	0	10	0	41	0	71	1	63	0	0	3	135	0	53	0	2	92	8
Galle	27	885	2	86	0	3	0	9	0	26	6	263	2	108	0	12	0	0	2	256	0	58	0	2	75	25
Hambantota	9	347	0	49	0	5	0	9	0	31	10	141	0	58	0	43	0	0	3	122	0	12	4	302	75	25
Matara	12	417	1	65	2	10	0	5	0	45	9	258	2	48	0	50	0	1	6	230	1	20	1	144	100	0
Jaffna	79	1579	21	1009	1	11	1	171	0	87	0	18	24	624	0	14	0	2	0	204	0	19	0	0	100	0
Kilinochchi	1	83	0	100	0	1	0	19	0	31	0	2	0	27	0	0	0	1	0	19	1	2	0	0	50	50
Mannar	0	85	0	17	0	1	0	5	0	5	0	8	0	21	0	0	0	0	0	7	0	1	0	1	80	20
Vavuniya	0	135	1	29	0	6	0	74	0	28	0	18	0	13	0	2	0	2	0	40	0	20	1	8	50	50
Mullaitivu	0	126	6	41	0	2	0	16	0	16	0	7	0	9	0	4	0	1	0	5	0	5	0	9	40	60
Batticaloa	9	1393	7	323	0	7	0	29	0	182	1	24	0	4	0	12	0	1	0	62	0	18	0	0	64	36
Ampara	0	56	0	43	0	2	0	2	0	19	2	18	0	2	1	14	0	0	1	196	0	5	0	3	71	29
Trincomalee	3	538	2	123	0	0	0	37	5	56	1	16	0	26	4	79	0	1	10	108	0	10	0	6	83	17
Kurunegala	21	1149	15	230	0	8	0	7	0	28	22	321	0	31	0	44	0	7	7	390	1	38	2	138	78	22
Puttalam	30	658	3	118	0	5	0	9	0	9	0	44	0	22	0	3	0	1	3	65	0	32	0	3	62	38
Anuradhapura	9	357	1	155	0	5	0	4	0	67	38	267	1	23	0	25	0	1	4	184	0	33	0	326	58	42
Polonnaruwa	2	221	2	58	0	5	0	15	0	12	3	95	0	1	0	12	0	0	1	141	0	26	2	119	57	43
Badulla	12	519	2	242	0	14	0	11	0	27	2	80	1	133	4	217	0	3	0	206	4	100	0	7	82	18
Monaragala	9	190	1	118	1	5	0	17	0	5	7	154	0	83	2	464	0	1	3	99	0	31	0	38	91	9
Ratnapura	10	917	5	290	2	21	0	43	0	9	5	367	0	68	4	300	0	1	4	192	1	53	0	17	61	39
Kegalle	13	611	3	71	1	16	0	86	0	18	3	318	1	54	0	83	0	0	12	248	0	57	0	0	82	18
Kalmunei	5	481	3	120	0	1	0	1	3	64	0	11	0	0	0	7	0	0	1	107	1	12	0	0	46	54
SRI LANKA	639	25858	87	4167	7	175	7	834	18	1159	143	3750	33	1534	24	1837	0	30	74	4292	16	811	12	1174	73	27

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 27th November, 2015 Total number of reporting units 337 Number of reporting units data provided for the current week: 249 C**=Completeness
A = Cases reported during the current week. B = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

21st – 27th Nov 2015 (48th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2015	Number of cases during same week in 2014	Total number of cases to date in 2015	Total number of cases to date in 2014	Difference between the number of cases to date in 2014 & 2015
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	00	00	01	00	01	02	65	77	-16.1%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	01	00	00	00	02	00	03	10	357	623	-43.1%
Measles	02	01	02	00	01	01	02	01	00	10	24	2522	3026	-17.1%
Rubella	00	00	00	00	00	00	00	00	00	00	00	08	17	-53.1%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	04	-100%
Tetanus	00	00	00	00	00	00	00	00	00	00	01	16	14	+14.2%
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	12	22	-45.4%
Whooping Cough	00	00	00	00	00	02	00	00	01	03	02	96	77	+25.1%
Tuberculosis	28	16	24	10	08	15	00	02	02	96	181	9006	9021	-0.1%

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

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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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. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication

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