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Ministry of Health
231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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

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

Infectious disease outbreaks can be accidental or deliberate. The Anthrax attacks in the United States in 2001, malicious releases of dangerous pathogens, was a form of bioterrorism that reminded the world of the importance of international health security.

Avian influenza, Creutzfeldt–Jakob disease (human form of mad cow disease) and the Nipah virus infection are some of the newly emerging zoonosis that threaten public health security. Most avian influenza viruses (bird Flu) do not infect humans; however A (H5N1) and A(H7N9), have caused serious infections in humans. Outbreaks of avian influenza in poultry raise global public health concerns due to their impact on local and global economies and international trade, the potential to cause serious disease in people, and their pandemic potential. The A (H5N1) virus subtype, a highly pathogenic avian influenza, first infected humans in 1997 during a poultry outbreak in Hong Kong. It re-emerged in 2003 and 2004, and later spread from Asia to Europe and Africa and has become entrenched in poultry in some countries. A (H7N9) virus subtype, a low pathogenic avian influenza virus, has infected 3 humans in March 2013 in China, but no cases outside China have been reported. In 2009 the United States experienced a pandemic of A(H1N1) which spread to the US from an outbreak in Mexico. This spread across the 50 states. The estimated loss to the Mexican economy due to influenza was at 0.3 to 0.5 percent of GDP for 2009 and Mexican citizens travelling abroad became subjects of discrimination.

Trading of contaminated food between countries increases the potential for outbreaks. Cholera remains a global threat to public health security since its spread across the globe in the 19th century, from the Ganges delta in India. Six subsequent pandemics have killed millions of people across the world. The current pandemic started in South Asia in 1961. The true burden of cholera is underreported due to limitations in surveillance systems and fear of trade and travel sanctions. Chernobyl disaster, the worst nuclear plant accident in history occurred in 1986 in Ukraine, resulted in the radioactive contamination of the surrounding geographical area, which spread over much of the western USSR and Europe. The universal vulnerability for all these hazards indicates the need for a coordinated international response in terms of international public health security.

Public health emergencies of international concern (PHEIC)

A PHEIC is an extraordinary event which is determined, to constitute a public health risk to other states through the international spread of disease and to potentially require a coordinated

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international response. The responsibility of determining whether an event is a PHEIC lies with the WHO Director-General and requires the convening of the IHR Emergency Committee temporary recommendations include health measures to be implemented by the country experiencing the PHEIC, or by other countries, to prevent or reduce the international spread and avoid unnecessary interference with international traffic.

Events detected by the national surveillance system, are assessed according to the decision instrument of the WHO. Four diseases are always notifiable irrespective of the number of cases i.e. polio (wild-type polio virus), smallpox, human influenza new subtype, SARS; some are potentially notifiable-cholera, pneumonic plague, yellow fever, VHF (Ebola, Lassa, Marburg), West Nile Fever, or other diseases that are of special national or regional concern, e.g. dengue fever, Rift Valley fever, and meningococcal diseases because they have demonstrated the ability to cause serious public health impact and to spread rapidity internationally. The four criteria given by the WHO need to be fulfilled for the notification: public health impact is serious, event is unusual or unexpected, significant risk of international spread, risk of international travel or trade restriction.

A PHEIC declaration was first issued in April 2009 when the A (H1N1) pandemic was in phase 3; the second PHEIC declaration was issued in May 2014 with the resurgence of polio in Syria after its near-eradication. The wild poliovirus has been exported from 3 countries (Pakistan, Cameroon, and Syria) to 3 other countries (Afghanistan, Iraq and Equatorial Guinea), which were having humanitarian emergencies and other health challenges. On August 8th2014, WHO declared its 3rdPHEIC in response to the outbreak of Ebola in Western Africa.

The outbreak of Middle East Respiratory Syndrome (MERS-CoV) is an emerging infectious disease. To date 26 countries have reported cases including few countries in Asia. 186 cases and 36 deaths have been reported in Republic of Korea.Human-to-human transmission has been confirmed especially among close household contacts & hospital settings, showing potential for a pandemic of zoonotic disease. However this was not declared as a PHEIC as it did not fulfil the required criteria.

The IHR is the strongest existing tool for global health governance, integrating stakeholders beyond the major state powers into the global disease detection and response. The IHR (2005) expanded the WHO's authority in global health governance and allowed to use external sources of information to identify possible public health emergencies, to make inquiries from national authorities based on unofficial information sources and to state recommendations even in the absence of cooperation or agreement from affected member states.

The A(H1N1) influenza outbreak in 2009 tested the revised IHR (2005) and demonstrated the shortcomings, such as the dependence on national capacities and over and above evidence-based trade, and travel recommendations. Following its declaration as a PHEIC, there were concerns whether WHO should hold authority to declare a pandemic, given the economic consequences of approximately $18 billion for the decision. The move from pandemic alert level 4 to 5 led to immediate economic consequences, particularly for travel and trade-dependent industries. Many national decision makers strongly pressured WHO to consider illness severity in moving past level 5, fearing that economic impacts of the declaration would be disproportionately greater to the actual disease threat.

The third PHEIC due to the outbreak of Ebola in Guinea in December 2013, spread to Liberia and Sierra Leone in March 2014, At least 10,000 people have died so far from the disease. The CDC estimated that earlier intervention could have prevented the disease's spread, with less than 5,000 people dead. The biggest criticism of the current approach is that IHR (2005) is heavily focused on formal points of entry and exit, and did not take into account the porous border crossings people take. In addition, emphasis is mostly on health rather than inter sectoral and multi-disciplinary coordination. There is criticism that there was a delay in declaring a PHEIC by WHO for the Ebola outbreak that probably enabled it to spread rapidly. The lesson from Ebola has urged to return to the content of IHR to evaluate how to better prepare countries and the WHO for the next outbreak. This raises questions regarding the extent to which the IHR (2005) and the associated powers conferred on WHO can serve as a framework for global governance of disease control. If IHR (2005) were to serve as an effective framework for global governance of disease control, the regulations should be well operationalized in all member countries, which is yet to happen.

Compiled by Dr. Vindya Kumarapeli
MBBS, MSc, MD- Consultant Community Physician

To be continued….

Table 1: Selected notifiable diseases reported by Medical Officers of Health 28th – 04th Dec 2015 (49th 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	260	8815	3	179	1	16	0	100	0	123	3	307	0	10	0	48	0	4	8	463	1	44	0	1	**69**	**31**
Gampaha	70	3716	1	88	1	13	2	37	0	32	7	418	0	11	1	137	0	0	6	299	1	35	0	3	**53**	**47**
Kalutara	27	1376	1	114	0	8	0	57	0	153	5	411	0	6	0	36	0	3	2	280	0	58	0	0	**69**	**31**
Kandy	44	1199	12	158	0	6	0	31	2	65	4	123	0	72	7	149	0	0	4	232	1	29	0	17	**91**	**9**
Matale	3	381	2	44	0	2	0	10	0	13	0	63	0	9	0	31	0	0	0	31	0	43	1	32	**77**	**23**
NuwaraEliya	4	157	3	321	0	4	1	34	0	10	4	45	0	71	1	64	0	0	0	135	0	54	0	2	**85**	**15**
Galle	22	921	2	89	0	3	0	9	0	26	4	270	1	109	0	12	0	0	5	267	0	58	1	3	**85**	**15**
Hambantota	9	362	0	49	0	5	0	9	0	31	3	144	0	58	0	43	0	0	5	128	0	12	2	304	**83**	**17**
Matara	16	433	3	68	1	11	0	5	2	47	5	263	1	49	0	50	0	1	6	236	0	20	0	144	**100**	**0**
Jaffna	105	1684	24	1033	0	11	2	173	2	89	2	20	42	666	0	14	0	2	1	205	0	19	0	0	**100**	**0**
Kilinochchi	2	88	2	107	0	1	0	19	0	31	0	2	0	27	0	0	0	1	0	21	0	2	0	0	**50**	**50**
Mannar	2	87	2	19	0	1	0	5	0	5	0	8	2	23	0	0	0	0	0	7	0	1	0	1	**100**	**0**
0Vavuniya	7	145	0	30	0	7	0	77	0	28	0	18	0	13	0	2	0	2	0	40	0	21	0	8	**100**	**0**
Mullaitivu	1	128	4	45	0	2	1	17	0	16	3	10	0	9	0	4	0	1	0	5	0	5	0	9	**60**	**40**
Batticaloa	19	1417	6	332	0	7	0	29	0	182	5	30	0	4	0	12	0	1	0	62	0	18	0	0	**71**	**29**
Ampara	0	56	0	43	0	2	0	2	0	19	0	18	0	2	0	14	0	0	0	196	0	5	0	3	**0**	**100**
Trincomalee	5	544	1	125	0	0	0	37	0	56	0	16	0	26	0	79	0	1	0	111	0	10	0	6	**50**	**50**
Kurunegala	13	1165	5	238	0	8	1	8	0	28	19	343	0	31	2	46	2	9	4	395	0	38	4	144	**81**	**19**
Puttalam	5	665	17	139	0	5	0	9	0	9	1	46	0	22	0	3	0	1	1	68	1	35	0	3	**62**	**38**
Anuradhapura	4	362	1	156	0	5	1	5	0	67	24	321	0	24	0	25	0	1	1	188	0	35	3	329	**58**	**42**
Polonnaruwa	10	232	3	61	0	5	0	16	0	12	31	132	0	1	0	13	0	0	2	152	0	26	2	123	**100**	**0**
Badulla	8	527	3	245	2	16	0	11	0	27	4	84	3	136	3	220	0	3	1	208	2	102	0	7	**88**	**12**
Monaragala	8	198	1	119	0	5	0	17	0	5	13	167	1	84	5	469	0	1	2	101	0	31	1	39	**91**	**9**
Ratnapura	17	971	5	298	0	23	0	43	1	10	6	391	1	70	5	308	0	1	5	198	0	56	0	17	**78**	**22**
Kegalle	28	642	11	82	0	16	3	89	0	18	10	328	1	55	2	85	0	0	7	259	1	58	0	0	**82**	**18**
Kalmunei	5	490	4	124	1	2	1	2	0	64	0	12	0	0	0	7	0	1	0	107	1	13	0	0	**62**	**38**
SRILANKA	**694**	**26761**	**116**	**4306**	**6**	**184**	**12**	**851**	**7**	**1166**	**153**	**3990**	**52**	**1588**	**26**	**1871**	**2**	**33**	**60**	**4394**	**8**	**828**	**14**	**1195**	**76**	**24**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 04th December , 2015 Total number of reporting units 337 Number of reporting units data provided for the current week: 260 C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

28th – 04th Dec 2015 (49th 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	00	00	00	03	65	80	-19.1%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	01	02	00	00	01	03	00	01	08	07	366	632	-73.4%
Measles	02	00	03	01	00	03	01	00	03	13	11	2549	3043	-16.2%
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	00	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	01	00	00	00	01	00	13	24	-46.1%
Whooping Cough	01	00	00	00	00	01	01	00	00	03	00	101	78	+29.4%
Tuberculosis	73	17	21	01	16	00	13	11	35	185	157	9191	9178	+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**

ON STATE SERVICE

Dr. P. PALIHAWADANA
CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10