



WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health, Nutrition & Indigenous Medicine

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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Monkey pox – the emerging epidemic Part I

This is the first of a series of 2 articles.

The History of Monkeypox

Monkeypox is a zoonotic disease that is caused by infection with an enveloped double-stranded DNA virus belonging to the group of viruses (Orthopoxvirus genus in the family Poxviridae) which also includes variola virus (which causes smallpox), vaccinia virus (used in the smallpox vaccine), and cowpox virus¹.²With the eradication of smallpox in 1980 and the subsequent cessation of smallpox vaccination, monkeypox has emerged as the most important orthopoxvirus for public health. Monkeypox primarily occurs in central and west Africa, often in proximity to tropical rainforests, and has been increasingly appearing in urban areas. Animal hosts include a range of rodents and non-human primates².

Monkeypox was first identified in Denmark among laboratory cynomolgus monkeys in 1958 when two outbreaks of a smallpox-like disease occurred in colonies of monkeys captured in Malaysia, and transported via Singapore³. An outbreak of monkeypox at Rotterdam Zoo was reported in 1964⁴. Subsequently, monkeypox was detected in several laboratory monkeys in the US. No further cases in laboratory monkeys occurred after 1968.

The first documented case in humans was in 1970, in an unvaccinated 9-month old boy in the Équateur Province Democratic Republic of the Congo (formerly Zaire) where smallpox had been eliminated in 1968⁵. Almost 50 cases were reported between 1970 and 1979, with more than two-thirds of these being from Zaire.

Monkey pox eruption in an African child.



⁵Since 1970, human cases of monkeypox have been reported in 11 African countries: Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Cote d'Ivoire, Liberia, Nigeria, the Republic of the Congo, Sierra Leone and South Sudan⁶. The true burden of monkeypox is not known. For example, in 1996–97, an outbreak was reported in the Democratic Republic of the Congo with a lower case fatality ratio and a higher attack rate than usual.²By 1986, over 400 cases in humans were reported. Small viral outbreaks with a death rate in the range of 10% and a secondary human-to-human infection rate of about the same amount occur routinely in equatorial Central and West Africa⁷. The United States of America experienced an outbreak of Monkeypox in 2003 with 71 laboratory-confirmed cases of monkeypox. Since 2017, Nigeria has ex-

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perienced a large outbreak, with over 500 suspected cases and over 200 confirmed cases and a case fatality ratio of approximately 3%. Cases continue to be reported until today.

Monkeypox cases in people have occurred outside of Africa linked to international travel or imported animals, including cases in the United States, as well as Israel, Singapore, and the United Kingdom. Monkeypox is a disease of global public health importance as it not only affects countries in west and central Africa but the rest of the world. In 2003, the first monkeypox outbreak outside of Africa was in the United States of America and was linked to contact with infected pet prairie dogs. These pets had been housed with Gambian pouched rats and dormice that had been imported into the country from Ghana. This outbreak led to over 70 cases of monkeypox in the U.S².

Monkeypox has also been reported in travellers from Nigeria to Israel in September 2018, to the United Kingdom in September 2018, December 2019, May 2021 and May 2022, to Singapore in May 2019, and to the United States of America in July and November 2021. In May 2022, multiple cases of monkeypox were identified in several non-endemic countries including Canada, the United States of America, the United Arab Emirates, Australia and many European countries including Spain, Portugal and the United Kingdom². There are currently no known cases in Sri Lanka.

Transmission

The primary transmission of this zoonotic virus (from animal to human) is thought to occur through direct contact with infected animals (while capturing, slaughtering and/or preparing animals for food) or by ingestion of inadequately cooked flesh. If the skin or mucosa is damaged inoculation of the virus may occur. Secondary (human-human) transmission has been known to occur and has been confirmed as a major factor in the current outbreak (2022). Respiratory droplets and direct contact with mucosal/ cutaneous lesions or fomites are postulated as the routes of human-human transmission. However, although many of those affected in the current outbreak are homosexual males, the sexual transmission of monkeypox has not been yet confirmed.

The incidence of monkeypox infection has neither gender predisposition nor racial preference. However, in the African epidemics, 90% of those affected have been <15 years old. In the recent outbreaks, a rising trend of increased incidence among the 15-30-year-old cohort has been seen. Those not vaccinated for smallpox are postulated to be at high risk to contract monkeypox.

There are two distinct genetic clades of the monkeypox virus: the central African (Congo Basin) clade and the west African clade⁹. The Congo Basin clade has historically caused more severe disease and was thought to be more transmissible¹⁰. Mortality rates Of 1%-10% are therefore seen in Africa, although no fatalities occurred in the outbreak in the United States in 2003. The prognosis is influenced by the health and nutrition status,

vaccination status, comorbidities, amount of exposure to the virus, host immune response and the severity of complications.

Compiled By:

Dr. T. D. Bandara

MBBS (Colombo) MSc. Community Medicine

Medical Officer - Epidemiology Unit

**Table 1 : Water Quality Surveillance
Number of microbiological water samples April 2022**

District	MOH areas	No: Expected *	No: Received
Colombo	15	90	NR
Gampaha	15	90	NR
Kalutara	12	72	NR
Kalutara NIHS	2	12	NR
Kandy	23	138	NR
Matale	13	78	NR
Nuwara Eliya	13	78	NR
Galle	20	120	NR
Matara	17	102	NR
Hambantota	12	72	8
Jaffna	12	72	NR
Kilinochchi	4	24	NR
Manner	5	30	3
Vavuniya	4	24	NR
Mullatvu	5	30	NR
Batticaloa	14	84	NR
Ampara	7	42	NR
Trincomalee	11	66	NR
Kurunegala	29	174	NR
Puttalam	13	78	NR
Anuradhapura	19	114	NR
Polonnaruwa	7	42	0
Badulla	16	96	NR
Moneragala	11	66	NR
Rathnapura	18	108	NR
Kegalle	11	66	0
Kalmunai	13	78	NR

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

Table 1: Selected notifiable diseases reported by Medical Officers of Health 07th- 13th May 2022 (19th Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		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	11	2879	0	2	0	2	0	0	0	5	1	40	0	0	0	0	2	0	0	0	12	0	3	0	1	10	99
Gampaha	64	2299	0	4	0	0	0	0	0	6	0	39	0	0	0	3	0	1	1	11	0	7	0	7	5	71	
Kalutara	73	1163	0	4	0	1	0	1	0	6	5	118	0	2	0	1	0	2	0	25	2	12	0	0	3	100	
Kandy	61	777	3	7	0	0	0	0	0	4	4	32	0	11	0	5	0	0	1	23	0	2	0	4	8	96	
Matale	15	184	0	0	0	0	0	0	0	0	1	25	0	2	0	1	0	0	0	8	0	1	0	145	17	100	
NuwareEliya	8	69	0	9	0	0	0	0	0	0	1	20	0	8	0	0	0	0	1	10	1	1	0	0	12	100	
Galle	83	1091	0	3	0	0	0	0	0	0	10	153	0	8	0	2	0	0	0	26	0	9	0	0	9	100	
Hambantota	24	343	0	23	0	0	0	0	0	0	0	63	0	16	1	3	0	0	0	14	0	5	3	185	15	100	
Matara	18	390	0	6	0	0	0	0	0	0	2	66	0	5	0	1	0	0	0	14	1	5	3	116	24	100	
Jaiffna	97	1506	2	14	0	2	0	38	0	19	0	18	9	364	0	4	1	4	1	57	0	4	0	0	56	88	
Kilinochchi	3	61	0	4	0	0	0	0	0	13	3	6	1	8	0	0	0	0	0	3	0	0	0	1	32	100	
Mannar	1	147	0	1	0	0	0	0	0	0	0	11	0	2	0	1	0	0	0	3	0	15	0	0	22	81	
Vavuniya	0	44	0	0	0	1	0	2	0	0	0	10	0	1	0	0	0	0	0	5	0	0	0	1	2	76	
Mullaitivu	0	30	1	3	0	0	0	2	0	3	4	17	0	4	0	0	0	0	1	4	0	0	0	1	24	100	
Batticaloa	64	600	0	41	0	5	0	0	0	17	0	15	0	0	0	1	0	0	1	6	1	18	0	1	32	100	
Ampara	2	63	0	6	0	1	0	0	7	7	0	37	0	1	0	1	0	0	1	27	0	8	3	11	9	100	
Trincomalee	50	736	0	20	0	0	0	1	0	2	3	13	0	3	0	4	0	0	2	13	0	3	0	0	18	92	
Kurunegala	19	1116	0	6	0	1	0	0	0	1	4	40	2	15	0	0	0	0	1	31	2	16	6	199	7	99	
Puttalam	21	926	0	2	0	0	0	0	0	0	0	7	0	3	0	0	0	0	2	5	1	11	0	4	13	92	
Anuradhapur	4	160	0	8	0	0	0	1	0	5	0	85	0	14	0	2	0	1	0	21	1	17	5	194	7	91	
Polonnaruwa	0	48	0	3	0	0	0	0	0	1	0	46	0	0	1	1	0	0	0	5	0	2	13	160	13	88	
Badulla	3	399	1	6	0	0	0	0	0	5	5	96	2	21	4	52	0	0	0	22	0	7	3	10	9	100	
Monaragala	8	134	0	5	0	0	0	4	0	2	11	142	0	11	2	22	0	0	3	28	0	16	3	64	6	100	
Ratnapura	38	858	0	21	0	5	0	2	0	16	13	279	0	8	0	11	0	0	2	32	1	17	0	91	10	95	
Kegalle	45	571	0	5	0	2	0	1	0	4	5	166	0	7	0	2	0	0	2	38	0	15	0	11	6	100	
Kalmune	29	370	1	20	0	0	0	0	0	4	1	8	0	1	0	0	0	0	0	18	0	13	0	0	26	100	
SRI LANKA	84	16964	8	223	0	20	0	52	7	120	73	1552	14	515	8	11	1	8	19	461	10	207	39	1206	14	95	

Source: Weekly Returns of Communicable Diseases (esurveillance.epid.gov.lk). T=Timeliness refers to returns received on or before 13th May, 2022 Total number of reporting units 361 Number of reporting units data provided for the current week. 335 C**=Completeness

Table 2: Vaccine-Preventable Diseases & AFP

07th – 13th May 2022 (19th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2022	Number of cases during same week in 2021	Total number of cases to date in 2022	Total number of cases to date in 2021	Difference between the number of cases to date in 2022 & 2021
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	01	00	00	00	01	01	33	20	65 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	00	00	00	00	00	01	00	01	03	16	41	- 60.9 %
Measles	00	00	00	00	00	00	00	00	00	00	00	11	08	37.5 %
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	01	01	00	05	02	150 %
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	01	00	0 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
Tuberculosis	00	00	00	00	00	00	25	00	10	35	117	2564	2377	7.8 %

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							

Source: Medical Research Institute & Veterinary Research Institute

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. Samitha Ginige
 Actg. CHIEF EPIDEMIOLOGIST
 EPIDEMIOLOGY UNIT
 231, DE SARAM PLACE
 COLOMBO 10