# WEEKLY EPIDEMIOLOGICAL REPORT

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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 virus[1]. [2]With 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 primates[2].

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 Singapore[3]. An outbreak of monkeypox at Rotterdam Zoo was reported in 1964[4]. 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 1968[5]. 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.**

[5]Since 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 Sudan[6]. 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. [2]By 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 Africa[7]. 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.S[2].

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 Kingdom[2]. 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 clade[9]. The Congo Basin clade has historically caused more severe disease and was thought to be more transmissible[10]. Mortality rates 0f 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**:

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**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


... to be continued

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 | 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** |
| NuwaraEliya | 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** |
| Jaffna | 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** |
| **SRILANKA** | **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 (esurvillance.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 | 01 | 00 | 00 | 01 | 00 | 07 | 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 | | | | | | | |

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