WEEKLY EPIDEMIOLOGICAL REPORT

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Avian Influenza – Bird Flu

There are four types of influenza viruses: A, B, C, and D. Types A and B are responsible for seasonal epidemics in humans, but only type A viruses have the potential to cause global pandemics. Influenza A viruses are found in various animal species. If a new influenza A virus emerges that can infect humans and spread effectively from person to person, it could lead to an influenza pandemic.

Avian Influenza, commonly known as Bird Flu, is an infectious disease caused by avian influenza viruses. First identified over a century ago in Italy, these viruses naturally exist in the intestines of wild birds worldwide, typically without causing illness in them. Despite this, all bird species can contract the disease, though some are more vulnerable than others. It spreads easily among certain birds and can be deadly for domesticated birds like chickens, ducks, and turkeys. Avian influenza infection in birds can cause a range of symptoms, from mild illness to a highly contagious and swiftly lethal disease, leading to severe epidemics in bird flocks.

Avian influenza spreads easily within countries through contaminated bird droppings, saliva, and nasal secretions, which contaminate dust and soil. Airborne viruses can infect other birds, and contaminated equipment, vehicles, feed, cages, and clothing can transfer the virus between farms. Rodents and possibly flies can act as mechanical vectors. Infected wild bird droppings can introduce the virus to commercial and domestic poultry, especially when poultry roam freely or share water sources with wild birds. Crowded and unsanitary 'wet' markets also contribute to the spread of the disease.

The main risk factor for human infection seems to be exposure to infected live or dead poultry or contaminated environments, such as live bird markets. Activities like slaughtering, de-feathering, handling carcasses of infected poultry, and preparing poultry for consumption, especially at home, are also likely risk factors. There is no evidence that A(H5), A(H7N9), or other avian influenza viruses can be transmitted to humans through properly cooked poultry or eggs. However, a few human cases of influenza A(H5N1) have been linked to consuming dishes made with raw, contaminated poultry blood.

In 1997, human infections with A(H5N1) viruses were reported during a poultry outbreak in Hong Kong SAR, China. Since 2003, this virus has spread from Asia to Europe, Africa, and the Americas in 2021, becoming endemic in many countries' poultry populations. These outbreaks have led to millions of poultry infections, several hundred human cases, and numerous human deaths, with cases mostly reported in Asia but also Africa, the Americas, and Europe. In 2013, human infections with A(H7N9) viruses were first reported in China, spreading throughout the country's poultry population and resulting in over 1,500 human cases and many deaths from 2013 to 2019, with no human cases reported to WHO since 2019. Since 2014, sporadic human infections with avian influenza A(H5N6) viruses have been reported, mostly in China, along with occasional human infections from other avian influenza viruses.

On May 22, 2024, India's National Focal Point reported to WHO a human case of avian influenza A(H9N2) in a child from West Bengal, the second such case in India, with the first in 2019. The child has recovered and was discharged from the hospital. According to IHR (2005), human infection with a novel influenza A virus subtype must be reported to the WHO due to its potential public health impact. Most human A (H9N2) cases result from contact with infected poultry or contaminated environments and tend to cause mild illness. Further sporadic cases are possible as A (H9N2) is prevalent in poultry. WHO currently assesses the public health risk to the general population as low but will review this assessment if new information arises.

Signs and symptoms in humans

Exposure to avian influenza viruses can cause infection and illness in humans, with symptoms ranging from mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease and even death. The severity of the disease depends on the specific virus and the characteristics of the infected person. In rare cases, gastrointestinal and neurological symptoms have been reported. The fatality rate for A(H5) and A(H7N9) subtype infections in humans is higher than that of seasonal influenza infections.

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Diagnosis

For diagnosing avian influenza virus infections, a variety of specimens can be used. Unlike human influenza viruses, which mainly infect the upper respiratory tract, avian influenza viruses tend to infect the lower respiratory tract. For mechanically ventilated patients, the best specimens are from the throat, nasal cavity, bronchoalveolar lavage, and endotracheal aspirates. For non-ventilated patients, throat and nasal swabs are recommended. To improve the chances of virus isolation, specimens should be collected from different respiratory sites on multiple days. Dacron swabs with a plastic shaft are preferred over cotton swabs with a wooden shaft. The type of specimen depends on the disease stage and available laboratory facilities. Acute phase specimens should be collected within the first three to seven days of illness onset. Convalescent phase specimens, like blood, are generally less useful unless paired with acute phase blood specimens.

Laboratory tests for diagnosing avian influenza can be categorized into those that detect the virus or its antigens directly, and those that detect antibodies to the virus. Direct methods include virus isolation, detection of viral nucleic acid by polymerase chain reaction (PCR), and detection of viral antigens through immunofluorescence (IFA) tests or rapid antigen detection kits. Serological methods for detecting viral antibodies include the hemagglutination inhibition test (HAI) and micro-neutralization tests (MT).

Treatment

Neuraminidase inhibitors (NAIs) and M2 inhibitors (adamantanes) are authorized for treating infected patients during an influenza pandemic. The following NAIs have been authorized for the treatment of influenza: Zanamivir and Oseltamivir. Additionally, the cap-dependent endonuclease inhibitor Xofluza (baloxavir marboxil) has also been authorized for the treatment of influenza. M2 inhibitors, amantadine and rimantadine, are not recommended for seasonal influenza due to resistance to type A viruses and ineffectiveness against type B viruses. However, avian influenza A(H5N1) remains susceptible to M2 blockers, making these antivirals a treatment option for avian influenza infections in humans.

PREVENTION AND CONTROL

Influenza viruses persist and zoonotic infections will continue. To mitigate risks, robust surveillance in animal and human populations is crucial, along with a thorough investigation of each human case and proactive pandemic planning. Public health and animal authorities must collaborate closely during zoonotic influenza investigations.
The public should avoid contact with animals in areas affected by influenza, including farms and markets, and steer clear of surfaces contaminated with animal faeces. Vulnerable groups—children, the elderly, pregnant/postpartum women, and immunocompromised individuals—should avoid handling eggs or slaughtering animals.

Avoid contact with sick or dead animals, including wild birds; report findings to local authorities. Regular hand hygiene is vital, using soap and water or alcohol-based rubs, especially after animal contact. Practice food safety: separate raw and cooked foods, maintain cleanliness and handle meat properly.

Travellers in or from regions with avian influenza should avoid poultry farms, markets, and areas with animal faeces. Report respiratory symptoms promptly to local health services after travel from affected areas, suspecting influenza infection.

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Table 1 : Water Quality Surveillance
Number of microbiological water samples June 2024

District	MOH areas	No: Expected *	No: Received
Colombo	18	108	**6**
Gampaha	15	90	**NR**
Kalutara	13	78	**67**
Kalutara NIHS	2	12	**23**
Kandy	23	138	**NR**
Matale	13	78	**15**
Nuwara Eliya	13	78	**75**
Galle	20	120	**142**
Matara	17	102	**52**
Hambantota	12	72	**22**
Jaffna	14	84	**156**
Kilinochchi	4	24	**NR**
Mannar	5	30	**8**
Vavuniya	4	24	**17**
Mullatvu	6	36	**25**
Batticaloa	14	84	**10**
Ampara	7	42	**0**
Trincomalee	12	72	**0**
Kurunegala	29	174	**98**
Puttalam	13	78	**NR**
Anuradhapura	23	138	**8**
Polonnaruwa	9	54	**NR**
Badulla	16	96	**0**
Moneragala	11	66	**2**
Rathnapura	20	120	**NR**
Kegalle	11	66	**0**
Kalmunai	13	78	**8**

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

Table 1: Selected notifiable diseases reported by Medical Officers of Health 06th – 12th July 2024 (28th Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poisoning		Leptospirosis		Typhus F.		Viral Hep.		H. Rabiies		Chickenpox		Meningitis		Leishmania-		Tuberculosis		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	A	B	T*	C**
Colombo	320	6449	2	19	0	7	1	44	2	14	9	288	0	8	0	7	0	0	8	289	1	22	0	0	64	1196	**93**	**100**
Gampaha	125	2839	0	26	1	13	0	10	0	69	9	412	1	4	0	2	0	0	8	230	2	75	0	13	27	678	**79**	**100**
Kalutara	68	1792	0	19	1	2	1	28	0	29	16	444	0	5	0	8	0	1	17	391	1	36	0	1	56	304	**86**	**100**
Kandy	141	2674	1	25	0	2	0	6	0	54	4	161	0	21	0	8	0	1	4	280	0	13	0	25	5	334	**98**	**100**
Matale	24	453	1	6	0	0	0	2	0	17	1	67	1	2	0	4	0	0	5	89	0	6	9	163	3	79	**95**	**100**
Nuwara Eliya	10	233	2	91	0	5	0	8	1	194	3	119	0	28	0	5	0	0	6	148	0	9	0	0	3	158	**96**	**100**
Galle	34	1332	1	33	1	18	0	8	3	66	13	464	3	66	0	7	0	1	11	428	0	48	0	3	9	240	**75**	**100**
Hambantota	5	592	0	24	1	3	0	3	0	42	2	318	2	31	0	5	0	1	21	198	1	22	3	306	0	80	**93**	**100**
Matara	19	537	1	5	0	4	0	2	0	25	14	287	0	12	0	3	0	0	6	214	2	57	3	79	3	85	**91**	**100**
Jaffna	15	5119	1	42	0	2	1	20	0	30	2	15	13	411	0	4	0	1	2	147	2	10	0	1	9	171	**91**	**93**
Kilinochchi	0	269	0	8	0	0	0	2	0	2	0	17	0	8	0	0	0	1	0	5	0	5	0	0	0	13	**100**	**100**
Mannar	2	197	0	4	0	0	0	1	0	0	0	21	2	10	0	1	0	0	0	5	0	3	0	1	0	40	**96**	**100**
Vavuniya	3	147	1	7	0	1	0	1	0	21	3	69	0	4	0	4	0	0	2	29	1	13	0	8	1	23	**85**	**100**
Mullaitivu	3	188	0	5	0	0	0	0	0	16	1	59	0	11	0	0	0	0	0	4	1	2	0	8	0	19	**85**	**100**
Batticaloa	21	1223	3	83	0	9	0	6	25	45	1	52	0	2	2	17	1	1	0	78	1	28	0	3	8	89	**98**	**100**
Ampara	7	190	2	23	0	3	0	0	1	15	2	141	0	1	0	5	0	0	2	74	0	27	1	12	1	87	**73**	**100**
Trincomalee	7	550	1	12	0	1	1	3	0	4	1	125	0	12	0	3	0	0	1	40	0	10	0	11	4	70	**90**	**100**
Kurunegala	32	1630	3	31	1	22	0	3	0	345	14	401	0	17	0	4	0	2	10	308	2	176	7	360	15	311	**81**	**100**
Puttalam	13	763	0	5	0	1	0	3	0	2	4	156	2	10	0	1	0	1	2	87	1	43	1	23	1	131	**72**	**100**
Anuradhapura	6	543	1	12	0	3	0	2	0	26	8	292	0	26	0	8	0	1	4	165	0	27	19	509	11	170	**89**	**100**
Polonnaruwa	7	250	1	15	0	0	0	1	0	6	2	192	0	1	1	6	0	0	2	86	0	20	11	312	0	61	**93**	**100**
Badulla	15	602	0	19	0	4	0	4	1	28	8	351	1	20	2	16	0	0	6	215	0	21	0	23	11	134	**89**	**100**
Monaragala	15	529	2	11	0	2	0	2	1	78	9	534	1	22	2	19	0	1	2	74	0	63	5	147	3	70	**81**	**100**
Ratnapura	51	1726	3	70	0	4	0	8	0	11	28	1086	0	15	0	17	0	2	5	203	1	79	0	109	6	177	**88**	**100**
Kegalle	35	1419	0	10	0	6	0	8	0	9	12	438	1	19	0	6	0	1	18	528	0	42	0	17	0	188	**88**	**100**
Kalmunai	11	590	0	15	0	0	0	0	0	5	2	53	0	2	0	4	0	0	2	146	0	11	0	0	0	81	**87**	**100**
SRILANKA	**989**	**32836**	**26**	**620**	**5**	**112**	**4**	**175**	**34**	**1153**	**168**	**6562**	**27**	**768**	**7**	**164**	**1**	**15**	**144**	**4461**	**16**	**868**	**59**	**2134**	**240**	**4989**	**88**	**99**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 12th July, 2024 Total number of reporting units 358 Number of reporting units data provided for the current week: 356**C****-Completeness *

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

Table 2: Vaccine-Preventable Diseases & AFP

06th – 12th July 2024 (28th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2024	Number of cases during same week in 2023	Total number of cases to date in 2024	Total number of cases to date in 2023	Difference between the number of cases to date in 2024 & 2023
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	01	00	00	00	00	01	01	40	50	-20 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	01	00	01	00	00	00	01	01	00	04	08	158	121	30.5 %
Measles	03	00	00	01	00	01	00	00	00	03	22	224	62	261.2 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	02	01	100 %
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	00	04	06	-33.3 %
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	02	-50 %
Whooping Cough	01	00	00	00	00	01	00	00	00	02	00	31	05	520 %

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

Take prophylaxis medications for leptospirosis during the paddy cultivation and harvesting seasons.

It is provided free by the MOH office / Public Health Inspectors.

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