



# WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit  
Ministry of Health

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## Global concern over Streptococcus Toxic Shock Syndrome outbreak in Japan

### Global concern over Streptococcus Toxic Shock Syndrome outbreak in Japan

The global news of the increased incidence of Streptococcus Toxic Shock Syndrome (STSS) in Japan has sparked significant concern both within the country and internationally. This rise even has prompted inquiries regarding travel to Japan. The cancellation of a soccer match between Japan and North Korea due to STSS-related health concerns has further amplified global attention on the disease.

#### Situation in Japan

In Japan, STSS was first reported in 1992. Since then, cases have been reported with an average of 100 to 200 annually. In 2019, 894 cases were reported. For the entire year 2024, there were 941 cases with 77 deaths. As of June 2, 2024, 977 cases were reported with 97 deaths. However, it has not been reported whether these cases are sporadic or clusters. The predicted case load for the entire 2024 is 2,500. The fatality rate remains high at around 30%, with most deaths occurring within 48 hours of diagnosis, primarily affecting individuals over 60 and those with underlying health conditions

#### Group A Streptococcus and STSS

Streptococcus is a bacterium with subgroups A, B, C, D, and G. Streptococcal Toxic Shock Syndrome (STSS) is a rare but rapidly progressive condition usually caused by Group A Streptococcus (GAS). GAS is commonly found in the skin, nose, and throat of humans.

Mild diseases caused by GAS are common and include infections of the skin and soft tissues, as well as respiratory tract infections such as impetigo, scarlet fever, tonsillitis, and pharyngitis.

Severe diseases caused by GAS, which can be deadly, include cellulitis, necrotizing fasciitis, and STSS. When the organism invades tissues where it is not typically found, such as the blood and muscle, it can cause severe illness.

Additionally, GAS can lead to immune-

mediated long-term illnesses such as glomerulonephritis and rheumatic fever.

STSS occurs when GAS bacteria invade tissues, triggering severe inflammatory responses. Early antibiotic treatment can resolve symptoms, but in vulnerable individuals, particularly those with compromised immune systems, GAS can progress rapidly to a toxin-mediated form of STSS.

Symptoms of STSS typically begin with fever, chills, muscle aches, nausea, and vomiting, often accompanied by pain and swelling in the affected area. Within 24 to 48 hours, patients may develop severe complications such as organ failure, low blood pressure, and rapid deterioration of vital signs. Even with prompt medical intervention, STSS can be fatal.

#### High-risk factors for STSS and transmission

High-risk factors for STSS include advanced age, pre-existing skin injuries or infections, and underlying health conditions like diabetes or liver disease. Other risk factors include immunosuppression, pregnancy, intravenous drug usage, homelessness, and recent infections like chickenpox or influenza.

Person-to-person transmission of the organism occurs through large respiratory droplets (coughing, sneezing) or direct contact with patients or carriers. It is extremely rare to spread the organism through infected surfaces. This mode of transmission limits widespread dissemination compared to airborne diseases such as measles or COVID-19

#### Possible causes for epidemiological trends in Japan

The exact reasons for the recent surge in STSS cases in Japan are not fully understood. One hypothesis suggests that the relaxation of COVID-19 restrictions in May 2023, may have increased exposure to GAS. Additionally, the emergence of more virulent GAS strains, such as the M1UK subtype, which produces potent toxins and is highly transmissible, could be

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contributing factors. However, it remains unclear whether the rapid increase in cases is directly linked to the transmission of M1UK. Further research is needed to confirm these hypotheses.

**Global trend of STSS**

The increase in cases of STSS in Japan has not occurred in isolation. The highest reported number of pharyngitis cases caused by GAS in children over the last five years is also reported this year, with 11,500 cases from 3,000 pediatric hospitals.

In the United States, 145 cases of STSS were reported in 2021. For the first six months of 2023, there were 395 cases, compared to 390 reported for the same period in 2024. Similarly, the UK, France, Ireland, Sweden, and the Netherlands have also experienced an increasing rate of GAS infections since 2022.

STSS is recognized as a disease in Sri Lanka as well, with no recent increase in cases reported. It remains treatable and responsive to penicillin. Given the global situation, both global health authorities and Sri Lankan authorities remain vigilant and prepared to respond to any emerging health threats posed by STSS.

**Is there a need for travel restrictions?**

While there has been an increase in reported cases of STSS in Japan, the numbers remain lower than those of other infectious diseases. During the peak of the COVID-19 pandemic, for instance, there were approximately 250,000 cases per day globally, whereas weekly reported cases of STSS in Japan range from 25 to 50 in 2024. Consequently, STSS is not currently considered a significant public health issue.

Moreover, since STSS is not transmitted through airborne means, the likelihood of a pandemic scenario is low, rendering travel restrictions unnecessary. Additionally, there is no recommendation for mass masking among the general public.

**Control and prevention of STSS**

Preventive measures for STSS and other GAS diseases include:

- Enhancing surveillance and reporting to monitor STSS cases and trends
- Enhancing laboratory facilities for accurate and timely diagnosis
- Strengthening public health measures such as hand hygiene, cough etiquette, wound care and timely treatments through public awareness
- Addressing high-risk populations such as providing targeted immunization campaigns against influenza and other preventable infections
- Collaborative research efforts to understand local epidemiological trends and potential drivers of STSS outbreaks. This includes genetic sequencing of GAS strains to identify virulence factors and inform targeted interventions.

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Table 1 : Water Quality Surveillance Number of microbiological water samples May 2024			
District	MOH areas	No: Expected *	No: Received
Colombo	18	108	4
Gampaha	15	90	NR
Kalutara	13	78	76
Kalutara NIHS	2	12	14
Kandy	23	138	41
Matale	13	78	0
Nuwara Eliya	13	78	31
Galle	20	120	NR
Matara	17	102	155
Hambantota	12	72	28
Jaffna	14	84	NR
Kilinochchi	4	24	12
Mannar	5	30	4
Vavuniya	4	24	54
Mullatvu	6	36	18
Batticaloa	14	84	0
Ampara	7	42	0
Trincomalee	12	72	NR
Kurunegala	29	174	34
Puttalam	13	78	5
Anuradhapura	23	138	0
Polonnaruwa	9	54	0
Badulla	16	96	0
Moneragala	11	66	0
Rathnapura	20	120	7
Kegalle	11	66	7
Kalmunai	13	78	0

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

Table 1: Selected notifiable diseases reported by Medical Officers of Health 08<sup>th</sup>–14<sup>th</sup> June 2024 (24<sup>th</sup> Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poisoning		Leptospirosis		Typhus F.		Viral Hep.		H. Rabies		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	A	B	A	B	A	B	T*	C**
Colombo	182	5374	2	11	0	5	1	40	0	6	4	215	0	8	0	7	0	0	7	240	0	15	0	0	0	54	1010	79	100		
Gampaha	105	2391	4	18	2	10	0	8	0	66	27	353	0	3	0	2	0	0	2	179	5	65	0	10	31	563	53	100			
Kalutara	50	1555	0	16	0	1	0	26	0	16	32	347	0	5	0	8	0	0	0	340	0	33	0	1	6	242	80	100			
Kandy	70	2247	2	19	0	2	0	6	0	37	3	136	3	21	1	8	0	1	5	260	0	11	1	23	14	277	100	100			
Matale	3	387	0	3	0	0	0	2	0	17	1	59	0	1	0	4	0	0	3	72	0	6	12	139	4	67	92	100			
Nuwara Eliya	4	204	5	68	0	4	1	8	1	188	3	104	0	28	0	3	0	0	7	131	0	9	0	0	6	143	100	100			
Galle	21	1208	2	26	0	10	0	7	2	51	14	390	3	60	0	6	0	1	10	354	2	43	0	3	9	207	5	99			
Hambantota	9	557	0	23	0	2	0	3	0	36	5	298	1	22	0	3	1	1	4	164	0	19	15	270	15	76	100	100			
Matara	11	478	0	4	0	3	0	2	1	7	20	210	0	10	0	2	0	0	9	195	2	49	1	58	7	70	82	100			
Jaffna	18	5052	1	39	0	2	1	5	0	24	0	13	4	376	0	3	0	1	2	137	0	7	1	1	5	148	86	93			
Kilinochchi	0	269	0	7	0	0	0	2	0	2	1	16	0	7	0	0	0	0	0	5	0	4	0	0	0	13	100	100			
Mannar	1	189	1	4	0	0	0	1	0	0	0	18	0	7	0	1	0	0	0	4	0	3	0	1	3	35	60	100			
Vavuniya	2	138	2	6	0	1	0	1	0	14	3	62	1	4	0	4	0	0	1	25	1	10	0	7	0	16	75	100			
Mullaitivu	0	182	0	4	0	0	0	0	0	12	0	57	0	11	0	0	0	0	1	3	0	0	0	6	0	16	100	100			
Batticaloa	19	1157	4	77	0	9	0	5	2	18	3	44	0	2	2	13	0	0	0	64	0	25	1	2	6	72	100	100			
Ampara	8	167	2	20	0	2	0	0	1	13	3	135	0	1	0	5	0	0	2	64	0	26	0	8	1	81	43	100			
Trincomalee	7	510	0	11	0	0	0	2	0	2	2	117	1	11	1	1	0	0	0	33	0	9	1	10	7	49	92	100			
Kurunegala	36	1491	2	25	1	19	0	3	1	344	23	341	1	17	0	2	0	2	26	265	11	154	8	306	19	262	66	100			
Puttalam	10	693	2	4	0	1	0	3	1	1	2	141	1	6	0	1	0	1	2	79	3	33	2	20	10	93	69	100			
Anuradhapura	8	524	0	9	0	3	0	1	1	18	13	264	0	25	0	7	0	1	5	146	1	24	27	455	4	139	87	100			
Polonnaruwa	6	222	1	14	0	0	0	1	0	2	7	171	0	1	0	4	0	0	2	80	1	20	20	278	0	52	89	100			
Badulla	5	539	0	15	0	4	1	4	0	24	6	297	1	18	0	12	0	0	6	182	1	18	1	16	3	102	75	100			
Monaragala	14	474	0	8	0	2	0	2	0	76	6	498	2	21	0	15	0	1	1	64	1	55	7	125	4	51	100	100			
Ratnapura	47	1508	2	55	0	3	1	7	0	9	56	927	1	14	1	17	0	2	9	172	4	72	8	98	12	159	60	100			
Kegalle	36	1282	0	9	0	6	0	6	0	8	24	347	2	17	0	6	0	1	11	445	0	38	0	16	10	160	82	100			
Kalmunai	5	553	1	15	0	0	0	0	0	5	1	47	0	2	1	3	0	0	6	130	0	9	0	0	7	72	92	100			
<b>SRILANKA</b>	<b>677</b>	<b>29351</b>	<b>33</b>	<b>510</b>	<b>3</b>	<b>89</b>	<b>5</b>	<b>145</b>	<b>10</b>	<b>996</b>	<b>259</b>	<b>5607</b>	<b>21</b>	<b>698</b>	<b>6</b>	<b>137</b>	<b>1</b>	<b>12</b>	<b>138</b>	<b>3833</b>	<b>32</b>	<b>757</b>	<b>105</b>	<b>1853</b>	<b>237</b>	<b>4175</b>	<b>80</b>	<b>99</b>			

Source: Weekly Returns of Communicable Diseases (esurveillance.avid.gov.lk). T=Timeliness refers to returns received on or before 14<sup>th</sup> June, 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**

08<sup>th</sup> – 14<sup>th</sup> June 2024 (24<sup>th</sup> 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	00	00	00	00	00	00	00	34	43	-20.9 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	01	00	00	00	02	02	00	00	01	06	06	139	101	37.6 %
Measles	00	00	01	00	00	00	00	00	00	01	03	212	07	2928.5 %
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	01	00	00	00	01	00	03	05	-40 %
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	02	00	00	00	00	00	00	00	00	02	00	18	04	350 %

**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.**

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](mailto:chepid@sltnet.lk). **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

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