



WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health

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Typhus Fever

Typhus fever includes a group of bacterial infections caused by Rickettsia species, which are intracellular bacteria transmitted to humans through vectors like lice, fleas, and mites, and is classified into three main types based on the causative agent and mode of transmission: endemic typhus, epidemic typhus, and scrub typhus, all of which present with symptoms such as fever, headache, and rash. The disease occurs when bacteria are transmitted to humans via vectors. Once inside the body, the bacteria infect endothelial cells lining blood vessels, leading to widespread inflammation and potential vascular damage.

Historically, typhus fever has triggered catastrophic outbreaks, particularly during times of war, poverty, and natural disasters, when overcrowding and poor hygiene create ideal conditions for its spread. Despite significant advances in hygiene and modern medicine, typhus continues to pose a significant public health challenge, particularly in resource-limited and developing regions, where environmental and socio-economic factors perpetuate its transmission.

Types	Endemic (Murine)	Epidemic	Scrub
Bacteria	Rickettsia typhi	Rickettsia prowazekii	Orientia tsutsugamushi
Transmission	Fleas	Body lice	Chiggers (larval mites)
Reservoir	Rodents (e.g., rats) and small mammals	Human	Small mammals in forests and grasslands
Geography	Urban area, Warm climate	War zone, Crowded area, extreme poverty	Rural-Asia Pacific

Table 1- Types, organisms, transmissions and geography of types of typhus

How is typhus transmitted?

Typhus is transmitted when a flea, louse, or chigger infected with typhus bacteria bites you, and its faeces enter the bite wound. Different insects are responsible for spreading specific types of typhus:

Murine typhus: Spread by cat fleas (*Ctenocephalides felis*) and rat fleas (*Xenopsylla cheopis*). While their names suggest cats and rats as primary carriers, these fleas can also be found on dogs, mice, opossums, raccoons, squirrels, and other rodents.



Rat fleas (*Xenopsylla cheopis*). Picture Credits- CDC

Epidemic typhus: Transmitted by body lice, which thrive in crowded environments lacking access to basic hygiene, such as clean water, soap, and clothing. In the U.S., infected lice on flying squirrels can also spread this form of typhus.



Pediculus humanus corporis, the human body louse
Picture Credits- CDC

Scrub typhus: Spread by chiggers, which are commonly found in grassy or brushy areas.



Chiggers (larval mites)
Picture Credits- CDC

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Signs and Symptoms

Symptoms vary slightly by the type of typhus, but some symptoms are associated with all three types of typhus, such as:

- **Fever:** High-grade fever is one of the earliest symptoms
- **Headache and Muscle Pain:** Severe headaches and generalized body aches are common.
- **Rash:** Appears in most cases, starting on the trunk and spreading to the limbs.

Symptoms of epidemic typhus typically have a sudden onset and can be severe, affecting multiple systems of the body. Key symptoms include a persistent, severe headache and a high fever that often exceeds 102.2°F. A characteristic rash usually develops on the chest or back and later spreads to other areas of the body. Neurological symptoms, such as confusion, stupor, or appearing out of touch with reality, may also occur. Further signs include hypotension, sensitivity of the eyes to bright light, and severe muscle pain.



Figure. Diffuse rash consisting of multiple, small, erythematous, and confluent macules

Photo credit- Western Journal of Emergency Medicine, Julie Gorchynski, MD, MSc.

Endemic typhus typically presents with symptoms that last for 10 to 12 days, which are similar to those of epidemic typhus, though they are usually less severe. Common symptoms of endemic typhus include a dry cough, nausea and vomiting, and diarrhoea.

People with scrub typhus often experience a range of symptoms, including swollen lymph nodes, fatigue, and a red lesion or sore at the site of the bite (Eschar). Additionally, individuals may develop a cough and a rash.



Typical Eschar seen in Scrub Typhus, Photo Credits- Courtesy, Carlton Reiley, M.D.

Diagnosis

Diagnosing typhus fever can be challenging due to its non-specific symptoms. Laboratory tests used to confirm the diagnosis include serology, which detects antibodies against Rickettsia or Orientia species, and PCR, which identifies bacterial DNA in blood or tissue samples. The Weil-Felix test, an older and less specific method based on cross-reacting antigens, is also sometimes used but is generally considered less reliable.

Treatments

Prompt treatment with antibiotics is essential for all types of typhus fever to ensure effective recovery and prevent complications. Doxycycline is the drug of choice, effective against all types of typhus, while chloramphenicol may be used as an alternative in cases where doxycycline is contraindicated. In

severe cases, supportive care, such as fluid replacement and management of complications, is often necessary. Early initiation of treatment significantly reduces the risk of severe outcomes. If left untreated, typhus fever can lead to serious long-term complications, including neurological damage such as encephalitis and cognitive impairments, as well as organ failure involving the kidneys, heart, or lungs. Post-typhus syndrome, characterized by chronic fatigue and weakness, may persist for weeks to months after recovery. Moreover, epidemic typhus can reactivate years later as recrudescent typhus (Brill-Zinsser disease), particularly in immunocompromised individuals.

Prevention and Control

Preventing typhus fever focuses on controlling the vectors and reservoirs responsible for disease transmission. Improved hygiene, including regular bathing and laundering, helps eliminate lice infestations, a key vector in some types of typhus. Vector control measures, such as using insecticides, implementing flea control in pets, and managing rodent populations in endemic areas, are crucial for reducing disease risk. Additionally, wearing protective clothing and using insect repellents can safeguard individuals in mite-infested regions. Public health education plays a vital role in raising awareness about typhus transmission and prevention, empowering communities to adopt these protective measures.

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 02nd - 08th Nov 2024 (45th 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	B	A	B	T*	C**
Colombo	152	1018	5	41	0	11	0	49	2	25	28	502	0	8	0	9	0	0	9	517	1	43	0	2	41	1893	100	100
Gampaha	111	4898	2	41	2	37	0	14	0	77	44	811	0	11	0	11	0	0	17	433	1	129	0	26	25	1033	67	100
Kalutara	36	2512	2	33	0	2	1	38	0	38	17	786	0	8	0	11	0	1	20	607	0	60	0	2	12	506	93	100
Kandy	70	4089	3	37	1	7	0	9	1	60	12	244	2	36	0	12	0	3	10	375	0	13	2	57	11	549	100	100
Matale	25	802	0	17	1	3	0	8	1	29	2	97	0	6	1	9	0	0	4	141	2	24	11	345	6	116	100	100
Nuwara Eliya	5	330	1	136	0	7	0	11	0	208	8	166	0	42	0	9	0	0	7	249	0	18	0	1	0	240	100	100
Galle	27	1913	1	50	0	22	0	12	2	105	30	851	2	116	0	11	1	2	41	780	7	93	1	5	11	401	95	100
Hambantota	12	781	0	28	0	4	0	6	0	48	18	452	0	47	0	7	0	2	6	289	0	28	11	454	2	133	100	100
Matara	19	1067	0	11	0	6	0	2	0	29	15	530	1	29	0	24	0	0	5	338	2	73	5	111	3	149	94	100
Jaffna	26	5345	2	65	0	2	0	27	0	47	2	24	6	490	0	7	0	1	1	205	2	33	0	1	4	233	93	93
Kilinochchi	5	300	0	17	0	0	0	2	0	2	0	20	0	11	0	0	0	2	1	14	0	6	0	2	2	27	100	100
Mannar	3	302	2	17	0	0	0	1	0	6	2	29	0	13	0	1	0	0	0	10	0	5	0	1	0	56	100	100
Vavuniya	2	174	0	13	0	1	0	2	0	22	4	104	0	5	0	4	0	0	0	41	0	24	0	10	4	38	100	100
Mullaitivu	3	210	0	9	0	0	0	0	0	18	0	68	0	11	0	0	0	2	2	11	0	5	0	13	2	32	100	100
Batticaloa	14	1487	1	118	1	16	0	7	0	64	6	76	0	3	1	24	0	2	3	144	6	51	0	4	0	141	100	100
Ampara	7	250	3	37	0	4	0	0	0	23	11	187	0	2	0	6	0	1	4	122	0	36	0	22	0	105	100	100
Trincomalee	8	661	2	18	0	1	0	3	0	11	3	141	0	12	1	4	0	0	6	95	0	22	0	18	9	114	100	100
Kurunegala	20	2083	3	51	0	36	0	3	2	353	94	798	1	39	1	9	0	4	16	561	7	260	11	583	5	436	100	100
Puttalam	28	1080	0	11	0	4	0	3	0	3	12	250	0	38	0	4	0	1	1	124	2	74	1	36	0	190	92	100
Anuradhapura	13	697	0	33	1	8	1	3	0	43	4	403	0	31	0	14	0	1	6	270	2	60	23	813	4	255	91	100
Polonnaruwa	8	368	1	27	0	3	0	1	0	32	6	248	0	2	3	59	0	1	8	147	1	31	8	463	0	96	100	100
Badulla	7	789	0	38	0	10	0	8	0	58	5	460	2	48	0	49	0	0	8	349	0	37	1	42	6	225	94	100
Monaragala	19	888	1	20	0	5	0	3	1	87	9	616	2	33	10	64	0	1	5	161	0	94	4	233	0	118	100	100
Ratnapura	48	2618	3	113	1	11	0	9	1	33	52	1860	1	32	2	31	0	2	11	348	5	133	1	160	0	335	100	100
Kegalle	21	1842	1	27	1	11	0	10	1	15	40	761	0	31	0	13	0	1	21	824	2	75	3	30	0	320	73	100
Kalmunai	7	691	0	17	1	1	0	2	1	30	2	69	0	5	0	4	0	0	4	220	1	20	0	0	0	130	100	100
SRILANKA	696	4636	33	1025	9	212	2	233	12	1466	426	10553	17	1109	19	396	1	27	216	7375	41	1447	82	3434	147	7805	96	99

Source: Weekly Returns of Communicable Diseases (esurveillance.avid.gov.lk). T=Timeliness refers to returns received on or before 01st Nov, 2024 Total number of reporting units 358 Number of reporting units data provided for the current week: 358 C**=Completeness. A = Cases reported during the current week. B = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

02nd – 08th Nov 2024 (45th 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	01	00	00	01	01	66	81	-18.5%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	01	02	00	01	01	01	01	00	07	00	253	208	21.6 %
Measles	01	00	00	00	00	00	00	00	01	02	15	291	712	-59.1 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	02	09	-77.7%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	02	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	05	06	-16.6 %
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	02	11	04	175 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	59	07	742.8 %

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

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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