WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health & Mass Media

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WEER SRI LANKA 2025

Vol. 52 No. 41 04th – 10th Oct 2025

Floods and Their Global Health Impacts

Floods are the most common type of natural disaster in the world. They occur when water overflows onto land that is usually dry. Heavy rainfall, rapid snowmelt, or coastal storms such as cyclones and tsunamis are the main causes. Floods can happen suddenly or develop slowly over days. Regardless of how they occur, they can bring serious destruction to communities, damage homes and public infrastructure, and threaten human health and safety.

Between 1998 and 2017, floods affected more than 2 billion people worldwide. Those living in low-lying areas, near rivers, or in poorly constructed houses are the most vulnerable. Limited access to early warning systems, emergency support, and awareness of flood risks further increases vulnerability.

Types of Floods: There are three main types of floods:

1. **Flash floods** – These occur suddenly due to heavy rainfall or dam breaks, often within minutes or hours. Water levels rise quickly, flooding roads, streams, and houses.
2. **River floods** – These happen when continuous rain or melting snow causes rivers to overflow their banks.
3. **Coastal floods** – Caused by storm surges or tsunamis that push seawater onto land, especially during tropical cyclones.

Each type of flood has different causes but can have equally serious consequences for people's health and livelihoods.

Health Impacts of Flooding

Flooding affects both physical and mental health. Health impacts can occur during, immediately after, and long after a flood event.
Direct Physical Health Impacts

The most immediate effects are injuries and deaths. People can drown or suffer trauma from fast-moving water or debris. Electrical injuries and hypothermia are also common during floods. According to CATDAT data (RiskLayer GmMH), 5,688 deaths from flooding were reported in 32 European countries between 1980 and 2023.

Floodwaters often carry sewage, waste, and chemicals, exposing people to various pathogens. Cuts and wounds that come into contact with contaminated water can lead to infections.

Infectious Diseases

Floods can cause major outbreaks of infectious diseases due to water contamination and poor sanitation. When floodwaters mix with sewage, bacteria, viruses, and parasites can spread quickly. Children are especially at risk. Common diseases after flooding include:

- **Viral infections:** Norovirus, Hepatitis A, and Rotavirus
- **Bacterial infections:** *Campylobacter*, *E. coli*, *Salmonella*, and *Shigella*
- **Parasitic infections:** *Cryptosporidium* and *Giardia*

Stagnant water left behind after flooding provides breeding grounds for mosquitoes, leading to an increase in vector-borne diseases such as dengue, malaria, and chikungunya.

Flooding can also worsen respiratory diseases, heart conditions, and pregnancy-related complications.

Indirect Health Impacts

After a flood, the indirect health effects can last for months or even years. Damaged health facilities and blocked roads can delay medical treatments. Clean-up and rebuilding activities increase physical workload, leading to exhaustion and injuries. Shortages of clean water, food, and electricity make recovery harder.

People displaced by floods often have to live in temporary shelters or overcrowded conditions. These environments increase the spread of communicable diseases and respiratory infections caused by mold and fungal growth (e.g., *Aspergillus*).

Flooding can also disrupt supply chains for medicines, food, and healthcare. Patients who depend on regular treatments, such as dialysis, chemotherapy, or insulin, may face interruptions, worsening their conditions.

Mental Health Impacts

Floods not only damage homes and livelihoods but also have deep emotional and psychological consequences. Many survivors experience anxiety, insomnia, and depression. Some develop post-traumatic stress disorder (PTSD) due to loss of loved ones or property.

Studies show that up to 75% of people affected by floods experience some form of mental health problem. Financial stress, unemployment, and displacement increase these risks. Domestic violence and family conflicts may also rise after disasters.

Certain groups are more likely to suffer severe health consequences during floods. These include:

- The elderly and people with chronic diseases
- Children, who are more vulnerable to dehydration and infections
- Pregnant women, due to complications and a lack of care
- People with disabilities, who may struggle to evacuate

Emergency and rescue workers, who face occupational risks from contaminated water and debris
People staying in temporary shelters or camps face additional health threats because of crowded conditions and a lack of healthcare access.

A major global study published in *Nature Water* analyzed over 300 million hospital records from eight flood-prone countries, including Australia. The study found that people living in flooded areas had a 26% higher risk of being hospitalized for various diseases compared to those in non-flooded areas.

The study highlighted significant increases in hospital admissions for Cardiovascular diseases, Respiratory diseases, Infectious diseases, Digestive diseases, Diabetes Cancer, Nervous system disorders, Renal (kidney) diseases, Mental health disorders

Floods can damage water supply systems, leading to the spread of waterborne diseases. They also create damp environments that encourage the growth of mold, fungi, and bacteria. Contaminated food and water cause digestive illnesses, while poor air quality in flooded homes contributes to respiratory problems.

Displacement and poor living conditions increase stress and lower immunity. Long-term exposure to psychological stress can worsen existing chronic diseases like diabetes and hypertension. Limited healthcare access and delayed treatments after floods can increase mortality and long-term disability rates.

Climate change is making floods more frequent and severe. Rising sea levels and extreme rainfall events are leading to more widespread inundation. Studies estimate that around 23% of the global population is exposed to floodwaters during a 1-in-100-year event.

As the planet warms, these events are expected to occur more often, with greater intensity. This means that flood-related health problems will likely grow in number and severity if effective measures are not taken.
Protecting public health from floods requires a mix of prevention, preparedness, response, and recovery measures.

Prevention

- Identify flood-prone areas and restrict construction in those zones.
- Improve urban planning by increasing green spaces and using permeable surfaces to reduce runoff.
- Upgrade sewage and drainage systems to handle heavy rain.

Build and maintain flood protection infrastructure such as dams.

Preparedness

- Develop flood-health preparedness plans for hospitals and health centres.
- Ensure access to clean water, sanitation, and safe evacuation centres.
- Train communities in early warning systems and emergency response.
- Stockpile essential medical supplies for flood-prone areas.

Response

- Provide emergency healthcare, including vaccinations, wound care, and water purification.
- Monitor for outbreaks of waterborne and vector-borne diseases.
- Protect rescue workers through proper equipment and safety measures.

Recovery

- Support long-term mental health programs for flood survivors.
- Repair damaged health infrastructure and ensure safe housing.
- Rebuild communities using flood-resilient designs.
- Offer financial and social assistance to reduce stress and prevent long-term mental health issues.

Floods are becoming more frequent and severe worldwide, driven by climate change and urban expansion into risk-prone areas. Their health impacts are complex, ranging from drowning and infectious diseases to chronic illnesses and mental health disorders.

Protecting communities from these health risks requires integrated approaches that combine environmental management, resilient health systems, and community preparedness. Strong policies, early warning systems, and climate adaptation strategies are essential to reduce the burden of floods on global health.

As the world continues to face increasing climate-related disasters, understanding and addressing the health consequences of floods is critical for building safer, healthier, and more resilient societies.

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 27th – 03rd Oct 2025 (40th 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	129	9128	0	27	2	13	0	13	0	35	5	353	0	5	1	30	0	0	13	467	3	60	0	4	46	1606	94	100
Gampaha	56	5950	2	44	1	30	0	4	8	148	19	652	0	11	0	16	0	0	22	713	4	143	1	39	48	933	93	100
Kalutara	32	2002	0	33	0	6	0	19	0	83	8	524	0	3	0	6	0	0	13	714	1	41	0	2	9	460	73	97
Kandy	39	3622	0	44	0	3	1	8	5	52	5	247	0	47	2	9	0	0	21	494	1	22	1	63	5	503	39	100
Matale	19	1054	1	25	0	3	0	1	2	82	4	210	0	6	0	9	0	0	3	119	0	8	18	257	5	123	100	100
Nuwara Eliya	10	287	1	72	0	6	0	6	0	63	5	152	1	51	0	8	0	0	12	256	2	33	0	0	5	223	92	100
Galle	30	1727	0	48	0	6	0	7	3	89	21	692	0	74	0	11	0	1	12	651	4	136	0	3	7	418	80	100
Hambantota	15	760	1	37	0	5	0	2	1	8	3	316	2	30	1	13	0	0	2	264	1	24	12	289	1	118	100	100
Matara	12	1306	0	14	0	2	0	1	0	20	4	388	1	15	1	17	0	0	8	351	2	40	3	90	4	143	76	100
Jaffna	18	989	2	80	0	2	1	18	0	44	2	134	5	420	0	3	0	2	4	277	0	23	0	0	7	172	93	93
Kilinochchi	3	79	0	14	0	1	0	4	0	7	0	64	0	12	0	1	0	0	0	6	0	0	0	2	1	41	100	100
Mannar	0	139	0	6	0	0	0	1	0	3	0	29	0	16	0	2	0	0	0	18	0	14	0	7	0	41	100	100
Vavuniya	0	73	0	9	0	0	0	1	0	38	1	77	0	10	0	0	0	0	1	47	1	20	0	17	3	53	100	100
Mullaitivu	1	54	0	5	0	0	0	1	0	25	0	53	0	10	0	1	0	0	0	31	1	6	0	4	3	28	83	100
Batticaloa	14	1588	2	122	0	15	0	3	0	199	0	105	0	2	0	25	0	0	1	165	0	30	0	1	4	117	100	100
Ampara	0	213	3	48	0	11	3	3	2	37	0	193	0	3	0	12	0	1	2	187	1	45	0	22	1	50	71	100
Trincomalee	8	923	0	39	0	4	0	2	0	77	1	122	0	9	0	5	0	1	2	113	0	12	0	8	0	96	100	100
Kurunegala	8	1361	0	42	1	17	0	2	1	53	5	591	0	24	0	7	0	1	23	747	2	137	9	495	10	292	73	100
Puttalam	5	535	2	30	0	3	0	0	0	14	14	238	1	34	0	3	0	1	9	135	4	88	0	28	11	162	77	100
Anuradhapura	0	463	0	30	0	6	0	3	0	38	2	319	0	24	0	12	0	2	10	293	0	57	28	613	7	258	78	100
Polonnaruwa	7	300	0	16	0	6	0	1	3	76	0	240	0	1	3	25	0	0	6	170	1	23	11	380	6	75	88	90
Badulla	13	687	2	32	0	11	0	3	1	10	7	248	0	28	2	67	0	0	11	341	1	71	0	59	3	238	94	100
Monaragala	9	712	0	26	0	4	0	1	0	19	2	460	0	38	3	52	0	0	5	175	1	45	4	194	5	124	91	100
Ratnapura	70	4128	2	98	0	9	0	4	1	56	34	1283	0	30	1	16	0	1	5	383	1	96	2	200	3	319	95	100
Kegalle	19	1244	1	52	0	13	0	9	0	34	17	639	0	14	1	20	0	0	21	748	3	111	0	25	6	242	73	100
Kalmunai	6	338	1	38	0	6	0	0	0	21	2	98	1	2	0	5	0	1	3	191	0	50	0	0	6	116	85	100
SRILANKA	**523**	**39662**	**20**	**1031**	**4**	**182**	**5**	**117**	**27**	**1331**	**161**	**8427**	**11**	**919**	**15**	**375**	**0**	**11**	**209**	**8056**	**34**	**1335**	**89**	**2802**	**206**	**6951**	**86**	**99**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 03rd Oct, 2025 Total number of reporting units 360 Number of reporting units data provided for the current week: 359. C**-Completeness

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

Table 2: Vaccine-Preventable Diseases & AFP

27th - 03rd Oct 2025 (40th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2025	Number of cases during same week in 2024	Total number of cases to date in 2025	Total number of cases to date in 2024	Difference between the number of cases to date in 2025 & 2024
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	00	00	00	00	00	00	00	00	01	01	48	57	-15.7%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	02	01	01	00	01	02	00	00	01	08	02	198	226	-12.3 %
Measles	00	00	00	00	00	00	00	00	00	00	00	01	285	-99.6%
Rubella	00	00	00	00	00	00	00	00	00	00	00	04	02	-100%
CRS**	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	09	05	80 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Enceph-alitis	00	00	00	00	00	00	00	00	00	00	00	04	06	-33.3 %
Whooping Cough	00	00	00	01	00	00	00	01	00	02	02	20	55	-63.6 %

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. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

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