

Acute Watery Diarrhea (Cholera)

Look for these symptoms:

- Loose stools, typically at least three times in a 24-hour period.
- * Watery diarrhea is characteristically non-bloody, a "rice-water" appearance of stool flecked with mucous is suggestive of cholera whereas diarrhea with visible blood is dysentery*

- Associated features- abdominal cramping, vomiting, tenesmus and fever
- Signs of dehydration

Key Facts

- Diarrhea is defined as the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual).
- Diarrheal diseases are due to an infection in the intestinal tract, which can be caused by bacterial, viral and parasitic organisms.

Causative organisms:

- Diarrhea may also occur in other systemic infections, such as influenza, dengue fever, scrub typhus and malaria.
- Acute diarrhea can occur at any age, but children are more commonly affected
- Rota virus, Entamoeba histolytica, cholera and E. coli are the common causative organisms in Nepal.

Assessment of severity of dehydration among patients with acute watery diarrhea

	Examination	No signs of dehydration	Some dehydration	Severe dehydration
Look	Mental status	Alert	Restless, irritable	Lethargic, unconscious
	Eyes/anterior fontanelle in infant	Normal	Sunken	Very sunken
	Tears	Present	Absent	Absent
	Mouth/tongue	Moist/slightly dry	Dry	Very dry
	Thirst	Increased thirst	Thirsty, drinks eagerly	Drinks poorly or unable to drink
	Urine output	Normal or mildly reduced	Markedly reduced	Anuria
Feel	Skin pinch	Goes back rapidly	Goes back slowly	Tenting
	Pulse	Normal	Rapid, weak	Very weak or palpable
	Estimated fluid loss	< 50 ml/kg	50-100 ml/kg	>100 ml/kg

Laboratory Tests	Clinical Sample to be collected	Method	Assay	Facility
	Stool	Stool microscopy	Culture	Reference Laboratory/Tertiary level/Secondary level
		Stool dipsticks for cholera	RDT	All level
Other laboratory findings	- Leukocytosis with thrombocytopenia is common. Liver enzymes- SGPT and SGOT may be elevated. - Urea and creatinine may be elevated.			
Treatment	Supportive care: Easily treatable with inexpensive antibiotics with dramatic results and needs to be started on clinical suspicion. - Rehydrate with oral rehydration solution. Patients with severe dehydration and persistent vomiting require intravenous fluid- normal saline or ringer lactate - Zinc supplement 10 mg/day for 14 days for children - Antimicrobials - Severe diarrhea/cholera outbreak setting- doxycycline 300 mg (4-6 mg/kg for children) single dose - Blood mixed diarrhea (Shigellosis)- ciprofloxacin 500 mg (children 10 mg/kg 12 hourly) for 3 days. E. histolytica- metronidazole (400 mg 8 hourly for 5 days) - Nutrient-rich food- boiled starches, and cereals (potatoes, noodles, rice, wheat and oats) with salts are recommended			
Prevention	- Encourage to drink safe (purified) drinking-water. - Use of improved sanitation. - Hand washing with soap and water. - Good personal and food hygiene. - Health education about how infections spread; and - rotavirus vaccination. # exclusive breastfeeding for the infant up to first six months of life;			

*All cases should be reported in SORMAS platform

Reference:

- World Health Organization. Diarrhoeal disease [\[Internet\]](#). Geneva: World Health Organization; 2017 May 2 [cited 2026 Sep 16].



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SCRUB TYPHUS

Case Management

Look for these symptoms:

- High grade fever ($>104^{\circ}\text{F}$)
- Severe headache and Myalgia
- Profuse sweating and chills
- Painless black eschar (scab) in site of bite (seen in 40% of cases)
- Cough
- Rashes
- Red eye
- Diarrhea
- Enlargement of Lymph node



Eschar

Key Facts

- Scrub typhus is an acute, febrile, infectious illness that is caused by bacteria *Orientia tsutsugamushi*.
- Humans are accidental hosts in this zoonotic disease.
- Scrub typhus is transmitted to humans and rodents by some species of trombiculid mites ("chiggers", *Leptotrombidium delicense*)
- Humans acquire the disease from the bite of an infected larval stage of the mite (chigger). The bite of the mite leaves a characteristic 'eschar' that is useful for making the diagnosis
- Scrub typhus is generally seen in people whose occupational or recreational activities bring them into contact with habitat of chiggers such as vegetation- consisting of low-lying trees and bushes in banks of rivers, rice fields, poorly maintained kitchen gardens, grassy lawns.
- It occurs more frequently before and after the rainy season. Outbreaks of Scrub Typhus were reported across the country after the Nepal earthquake 2015.
- The disease is difficult to recognize and diagnose because the symptoms and signs of the illness are often non-specific.
- The incubation period of scrub typhus is about 5 to 20 days (mean 10-12 days) after the initial bite.
- For contaminated clothing, ensure proper management by containment and washing clothing/linens in hot water >60 degrees or chlorinated bleach solution (0.5% bleach)

Laboratory diagnosis	Clinical Sample to be collected	Method	Assay	Facility
	2-4 ml blood sample in a plain vacutainer	Serology	ELISA	Reference Laboratory/Tertiary level/Secondary level
		Serology	RDT	All level
Treatment	• Treatment should be initiated early on clinical suspicion as morbidity and mortality increases rapidly with delay in the treatment. Patient with mild illness without organ dysfunction can be managed with antipyretics (e.g. paracetamol) and antibiotics. • <u>Antibiotics</u> • Doxycycline (Drug of choice) 100 mg twice daily for individuals above 45 kg (<i>4.5mg/Kg body weight/day in 2 divided doses for children below 45 Kg</i>) for 7 days. Capsule should be swallowed with a glass of water in sitting or standing position. OR • Azithromycin 500 mg (<i>10 mg/Kg in in single dose for 5 days children</i>) once daily orally for 5 days. • Azithromycin or chloramphenicol is useful for treating infection in children and pregnant woman • When patient cannot swallow or is critically ill, injectable antibiotics should be administered as infusion for duration of 10-15 days: - Intravenous doxycycline 100 mg infusion in 100 ml normal saline over 30 minutes twice daily, OR - Intravenous azithromycin 500 mg once daily as an infusion in 100 ml of normal saline over 1 hour. *No vaccines are available till date for Scrub Typhus.			
Prevention	• Avoiding contact with infected chiggers. • In the areas with lots of vegetation and bush where chiggers may be found wear protective clothing, use insect repellents or insecticides treated clothing. • Chigger control by removal of bush/vegetation and residual spraying of vegetation.			

* All cases should be reported in SORMAS platform

Reference:

1. Epidemiology and Disease Control Division. National guideline on diagnosis, management and prevention of scrub typhus in Nepal, 2079 (2022) [[Internet](#)]. Kathmandu: Government of Nepal, Ministry of Health and Population; 2022 [cited 2026 Sep 16]



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Dengue | Clinical Management

Key facts:

- Dengue is a viral infection caused by the dengue virus (DENV), RNA virus with four distinct serotypes: DENV-1, DENV-2, DENV-3 and DENV-4.
- While many DENV infections are asymptomatic or produce only mild illness, DENV can occasionally cause more severe cases, and even death.
- Dengue virus infection can be classified as Asymptomatic and symptomatic infection. **Symptomatic infection** is further classified into three categories:
 - ✓ Dengue without warning signs
 - ✓ Dengue with warning signs
 - ✓ Severe Dengue – severe plasma leakage, severe hemorrhage, organ impairment.
- There is no specific treatment for dengue.

Transmission	Dengue transmission occurs mainly through the bite of infected female <i>Aedes aegypti</i> mosquitoes, and less commonly <i>Aedes albopictus</i>.
Clinical features	Incubation period: 4-10 days. There are 3 phases of disease in dengue: Febrile phase: lasts from 2-7 days. Characterized by sudden high fever & usually accompanied by facial flushing, erythema, generalized body pain, myalgia, arthralgia, headache, and retro-ocular pain. Critical/leakage phase: 24-48 hours after febrile phase; a practical indicator for determining critical phase is platelets count $\leq 100,000/\text{mm}^3$. Problems that can occur – shock due to plasma leakage, severe bleeding, serious organ involvement. <i>Patients who worsen with the drop in fever and show alarm signs are cases of dengue with warning signs.</i> Reabsorption/Recovery phase: 3-5 days after critical phase; improvement in general state, appetite recovers, gastrointestinal symptoms improve, hemodynamic state stabilizes, and diuresis increases. Warning signs include abdominal pain or tenderness, persistent vomiting, clinical fluid accumulation, mucosal bleeding, lethargy, restlessness, liver enlargement of more than 2 cm and, on laboratory testing, an increase in haematocrit concurrent with a rapid decrease in platelet count.
Diagnosis	- Detection of NS1 antigen by Rapid Diagnostic Test (RDT) from day 1 to day 6 of illness. - Detection of IgM by RDT or ELISA from day 6 onwards. Some RDTs combine detection of NS1 and IgM/IgG, which increases the chance of confirming the diagnosis in the early stage of illness. - Detection of viral RNA → RT-PCR
Treatment	- Treatment is mainly supportive with adequate hydration, no specific antivirals. - Pain can be managed with medication such as paracetamol (acetaminophen). - Recognition of warning signs is essential to prevent progression to severe dengue. For people with severe dengue, hospitalization is often necessary. Start intravenous fluid resuscitation with normal saline or Ringer lactate at 5-10 mL/kg per hour and reassess the patient's condition and haematocrit. If the haematocrit decreases, this indicates bleeding; crossmatch and transfuse blood as soon as possible. - In hypotensive patients, 20 ml/kg NS or RL over 15 minutes, reassess, if improving then 10 ml/kg in one hour and decrease the fluid infusion based on assessment. <i>Non-steroidal anti-inflammatory medicines such as ibuprofen and aspirin should be avoided as they can increase the risk of bleeding.</i>
Prevention and control	- Protect yourself from mosquito bites: - Wear full-sleeved clothing to protect yourself from mosquito bites. - Used mosquito nets, mosquito repellents, coils and vaporizers - Window screens - Prevent mosquitoes from breeding: - Implement environmental management and modification practices to stop breeding. - Remove artificial habitats that can hold water. - Cover, empty and clean domestic water storage containers regularly.

*All cases should be reported in SORMAS platform

Reference:

- World Health Organization. Dengue [Internet]. Geneva: World Health Organization; 2025 Aug 21 [cited 2026 Sep 16].
- Pan American Health Organization. Dengue [Internet]. Washington (DC): Pan American Health Organization; [cited 2026 Sep 16]
- Epidemiology and Disease Control Division. Short guideline on dengue case management [Internet]. Kathmandu: Government of Nepal, Ministry of Health and Population; [cited 2026 Sep 16].



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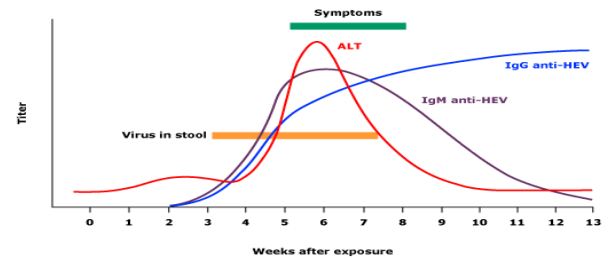
Acute Hepatitis E

Clinical features

- Majority of cases asymptomatic or mildly symptomatic.
- When symptomatic, jaundice is usually accompanied by malaise, anorexia, nausea, vomiting, abdominal pain, fever, and tender hepatomegaly.
- Less common features include diarrhea, arthralgia, pruritus, and urticarial rash

Key Facts

- Hepatitis E virus is a single-stranded, RNA virus in the Hepatovirus genus of the Hepeviridae family.
- It is the most common cause of acute viral hepatitis worldwide.
- Four groups of HEV- A, B, C and D. Group A infects human, deer, pig and rabbit; group C infects rat and can be transmitted to human while groups B and D infect avian species and bat respectively
- This virus is transmitted through contaminated food and water (most common); zoonotic transmission (undercooked meat of deer, wild boar, or pig); blood transfusion and possibly breast milk
- Incubation period: ranges from 2 to 10 weeks (average of 5 to 6 weeks)
- Antibodies to HEV (anti-HEV), IgM can be detected during acute illness when serum aminotransferases (SGPT and SGOT) are elevated and persists for ~3 months.
- Prognosis is good with chance of fulminant hepatic failure 0.5-4% cases (pregnancy, malnourishment and people with chronic liver disease are at increased risk). Acute HEV infection during pregnancy particularly in 2nd or 3rd trimester has been associated with a mortality rate of 15 to 25 % due to acute liver failure. Acute hepatic failure is characterized by hepatic encephalopathy, elevated aminotransferases (often with abnormal bilirubin and alkaline phosphatase levels), and coagulopathy (INR>1.5)
- Other less common complications are cholestatic hepatitis and chronic HEV



Laboratory diagnosis	Clinical Sample to be collected	Method	Assay	Facility
	Serum	Serology	Anti-HEV IgM	
			HEV RNA	
Other laboratory findings	- Transient neutropenia and lymphopenia with relative lymphocytosis is common. - Variable degree of rise in SGPT and SGOT (400-4000 U/L) precedes the rise in bilirubin γ-GT and alkaline phosphatase may be elevated			
Treatment	Supportive management - Most of the patients with acute hepatitis E recover spontaneously and do not require specific antiviral therapy - Ensure adequate hydration and nutritional support. - Administer intravenous fluids and antiemetics as needed for severe dehydration, nausea, or vomiting. - Treatment of inter-current infections			
Prevention	Hepatitis E can be prevented through safe water, sanitation, hand hygiene, and safe food practices. Drink safe, treated, or boiled water. - Use safe sanitation facilities and dispose of human waste properly. - Wash hands with soap and water after toilet use and before food preparation or eating. - Practice safe food hygiene and consume thoroughly cooked food; avoid raw or undercooked meat and shellfish. - Ensure appropriate water treatment (e.g., chlorination) if water source is compromised. - Pregnant women should take extra precautions to avoid contaminated food and water.			

*All cases should be reported in SORMAS platform.

Reference:

- Sherman KE. Hepatitis E virus infection [Internet]. UpToDate; 2026 May 7 [cited 2026 Sep 16].
- Chung RT, Dienstag JL. [Acute viral hepatitis](#). In: Loscalzo J, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, et al., editors. *Harrison's Principles of Internal Medicine*. 22nd ed. New York: McGraw Hill; 2025.
- World Health Organization. Hepatitis E [Internet]. Geneva: World Health Organization; 2026 Jul 28 [cited 2026 Sep 16].



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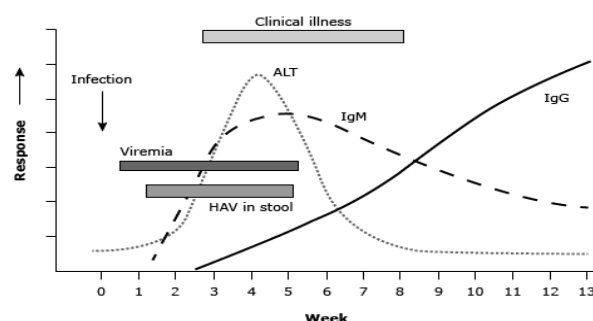
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Acute Hepatitis A

Clinical features

- Prodromal symptoms: Fatigue, nausea, vomiting, fatigue, malaise, arthralgia, myalgia may precede jaundice by 1-2 weeks
- A low-grade fever between 38° and 39°C (100°–102°F) may present
- With the onset of clinical jaundice, the constitutional prodromal symptoms usually diminish.
- Physical findings include jaundice, hepatomegaly (80 % cases), and right upper quadrant tenderness on palpation. Less common findings include splenomegaly, arthritis and skin rash.

HAV infection typical serologic course



Key Facts

- Hepatitis A virus is a single-stranded, RNA virus in the Hepatovirus genus of the pic
- This virus is transmitted almost exclusively by the fecal-oral route (person to person contact or consumption of contaminated food or water).
- Incubation period: usually 14–28 days.
- It replicates in hepatocytes, but it is also present in bile, stool, and blood during the late incubation period and acute pre-icteric phase of illness. It may persist longer in the liver, but fecal shedding, viremia and infectivity diminish rapidly once jaundice becomes apparent.
- Antibodies to HAV (anti-HAV), IgM can be detected during acute illness when serum aminotransferases (SGPT and SGOT) are elevated and persists for ~3 months.
- No HAV carrier state has been identified after acute hepatitis A.
- Prognosis is excellent with chance of fulminant hepatic failure less than 1%

Laboratory diagnosis	Clinical Sample to be collected	Method	Assay	Facility
	Serum	Serology	Anti-HAV IgM	
Other laboratory findings	• Transient neutropenia and lymphopenia with relative lymphocytosis. • Variable degree of rise in SGPT and SGOT (400-4000 U/L) precedes the rise in bilirubin • γ-GT and alkaline phosphatase may be elevated			
Treatment	Supportive management • Almost all persons with acute hepatitis A recover spontaneously and do not require specific antiviral therapy. • Management is supportive and focuses on maintaining adequate hydration, nutrition, and symptom relief. • Intravenous fluids and antiemetics may be required for severe vomiting or dehydration. • Treatment of inter-current infections.			
Prevention	Hepatitis A is mainly spread through contaminated food, water, and unclean hands. Safe water, good sanitation, hand hygiene, safe food practices, and vaccination are the most effective ways to prevent infection. • Drink safe, treated, or chlorinated water, as chlorine helps inactivate the virus. • Practice good hand hygiene and safe food handling: wash hands with soap and water after using the toilet and before preparing or eating food. • Avoid preparing or sharing food and drinks when ill with Hepatitis A. • Avoid consuming raw or undercooked foods; thorough cooking helps inactivate the virus. • Educate household members and close contacts about how Hepatitis A is transmitted and prevented. • Vaccination- Inactivated hepatitis A vaccines (2 doses, 6 months apart) especially to children and adolescents (1-18 years), and people with chronic liver disease			

*All cases should be reported in SORMAS platform.

Reference

1. Lai M, Chopra S. Hepatitis A virus infection in adults: epidemiology, clinical manifestations, and diagnosis [Internet]. UpToDate; 2022 Jan 26 [cited 2026 Sep 16].
2. Dienstag JL, Isselbacher KJ. *Acute viral hepatitis*. In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 22nd ed. Vol. 2. New York: McGraw Hill; 2025. p. 2562-84.
3. World Health Organization. Hepatitis A [Internet]. Geneva: World Health Organization; 2026 Jul 28 [cited 2026 Sep 16].



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INFLUENZA

Case Management

Look for these symptoms:

- high fever (greater than or equal to 38°C/101° F)
- Sore throat and coryza (runny nose)
- Cough (Dry; no production of sputum)
- Muscle ache/ Lethargy
- Eye infection/ Conjunctivitis

High risk population- Age ≥65 years, people with certain chronic medical conditions (such as asthma, diabetes, or heart disease), pregnant people and children ≤5 years may develop complications (such as pneumonia) which can be life-threatening,

Key Facts:

- Humans can be infected with avian influenza viruses, such as avian influenza virus subtypes A(H5N1), A(H7N9), and A(H9N2).
- Influenza infections in humans may cause disease ranging from mild conjunctivitis to severe pneumonia and even death.
- The majority of human cases of A(H5N1) and A(H7N9) infection have been associated with direct or indirect contact with infected live or dead poultry. Controlling the disease in animal source is critical to decrease risk to humans.
- Influenza viruses, with the vast silent reservoir in aquatic birds, are impossible to eradicate. Zoonotic influenza infection in humans can continue to occur. To minimize public health risk, quality surveillance in both animal and human populations, thorough investigation of every human infection and risk-based pandemic planning are essential.
- To reduce transmission of influenza, hand hygiene should be done before and after patient contact and always wearing a mask when in patient care areas.

Warning Signs	Children		Adults		
	Temperature 104° F not controlled by antipyretics		Difficulty breathing		
	Fast breathing or trouble breathing, Indrawing of ribs		Persistent chest pain		
	Bluish lips or face		Persistent dizziness, confusion		
	Child refuses to walk due to muscle pain		Severe muscle weakness		
	Dry mouth, no tears when crying, No urine for 8 hours		Signs of dehydration- decreased urine output		
	Not interacting when awake		Worsening of chronic medical conditions		
	Seizures		Seizures		
Diagnosis	Clinical Sample to be collected		Method	Assay	Facility
	Nasopharyngeal swab		Molecular	RT-PCR	Reference Laboratory/Tertiary level/Secondary level
	Nasopharyngeal swab		RDT	Lateral flow assay	All levels
Treatment	- For patients with suspected or confirmed influenza, administer symptomatic supportive care (e.g., antipyretics, hydration, rest). - If oseltamivir is available and the patient presents within 48 hours of symptom onset, consider oseltamivir for antiviral treatment. The standard dose of oseltamivir for adolescents and adults is 75mg of oseltamivir, twice daily (BD) for 5 days. Dose adjustment may be required for those with co-morbidities such as renal impairment.				
Vaccine	- Available as flu shot (inactivated influenza vaccine). - The vaccination is only for prophylactic purpose. Flu vaccination can reduce flu illnesses, doctor visits, and missed work and school due to flu, as well as prevent flu-related hospitalizations and deaths. - Vaccination is a must for people suffering from respiratory diseases (Bronchial Asthma, COPD, etc.) - Vaccines are available in two different forms - Trivalent vaccines protect against two influenza A viruses (an H1N1 and an H3N2) and an influenza B virus. - Quadrivalent vaccines protect against two influenza A viruses and two influenza B viruses.				
Prevention	Health care workers are at high risk of acquiring influenza virus infection during patient care. Preventive measures are as follows. - Wear mask while providing care. - Regular hand hygiene and proper respiratory hygiene. - Proper cleaning and disinfection of personal care equipment - Disposal of waste contaminated with patient's respiratory secretion				

*All cases should be reported in SORMAS platform

Reference:

1. World Health Organization. Guidelines for the clinical management of severe illness from influenza virus infections [Internet]. Geneva: World Health Organization; 2022 [cited 2026 Sep 16].
2. Centers for Disease Control and Prevention. Interim guidance on the use of antiviral medications for treatment of human infections with novel influenza A viruses associated with severe human disease [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2025 Jul 3 [cited 2026 Sep 16].
3. Department of Health Services, Epidemiology and Disease Control Division. Interim guideline on use of oseltamivir (Tamiflu) [Internet]. Kathmandu: Government of Nepal, Ministry of Health and Population; [cited 2026 Sep 16].



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Leptospirosis| Case Management

Key Facts:

- Zoonotic disease with epidemic potential, especially after a heavy rainfall, caused by various species and serovars of a bacterium called *Leptospira*.
- Leptospirosis may present with a wide variety of clinical manifestations, from a mild illness that may progress to a serious and sometimes fatal disease.
- Incubation period: 5-14 days, with a range of 2-30 days.

Transmission	Humans usually acquire leptospirosis through: • Contact with water or soil containing urine or body fluids from infected animals, especially after hurricanes, flooding, or heavy rainfall. • Directly touching body fluids from an infected animal. • Eating food or drinking water contaminated by the urine of an infected animal. Human-to-human transmission occurs very rarely.
Clinical features	The disease typically presents in four broad clinical categories: • A mild, influenza-like illness • Weil's syndrome characterized by jaundice, renal failure, haemorrhage and myocarditis with arrhythmias • Meningitis/meningoencephalitis • Pulmonary haemorrhage with respiratory failure The most common clinical features of leptospirosis include fever, myalgia (especially affecting the legs), headache, conjunctival suffusion which is a quite specific symptom.
Diagnosis	Primarily based on clinical features in a patient with risk factors (contact with contaminated water, or farming, or contact with rodents or dogs). • Acute phase – PCR is the gold standard. • Acute and convalescent – Microscopic Agglutination Test (MAT) serology (if available) • RDT for leptospirosis (not positive until 5-7 days).
Treatment	Antibiotics can be beneficial in severe disease, potentially preventing progression if started early. Mild disease is self-limited. Suggested regimens (oral dosing for mild disease, parenteral for moderate to severe disease) for 7 days treatment include: • Doxycycline 100 mg orally, twice daily (recommended in regions where rickettsial diseases such as scrub typhus are common); or • Ceftriaxone 2 g IV once daily; or • Cefotaxime 1 g IV every 6 hours; or • Benzylpenicillin 1.5 million units IV every 6 hours.
Prevention	• Don't swim or wade in water that might be contaminated with animal urine, especially after hurricanes, floods, or heavy rainfall. • Keep rodents away by putting food, water, and trash in closed containers, and trapping rodents. • Avoid contact with animals that may be infected. • Cover your cuts or scratches with waterproof bandages. • Wear waterproof protective clothing, shoes or boots near floodwater or other water or soil that may be contaminated with animal urine. For people who get exposed to infected animals as a result of their occupation (veterinarians, dairy workers, butcher, etc.) • Wash hands frequently. • Use personal protective equipment (gloves, footwear, eye protection). • Clean and disinfect surfaces and equipment. • Vaccinate animals against leptospirosis, and isolate sick animals. • Control the rodent population around your work area.

*All cases should be reported in SORMAS platform

References:

1. World Health Organization, Regional Office for South-East Asia. [Leptospirosis](#). In: SEARO IMAI District Clinician Manual: Hospital Care for Adolescents and Adults Guidelines for the Management of Common Illnesses and Notifiable Diseases. Vol. 1. New Delhi: WHO Regional Office for South-East Asia; 2021 Jan.
2. Centers for Disease Control and Prevention. About leptospirosis [\[Internet\]](#). Atlanta (GA): Centers for Disease Control and Prevention; [cited 2026 Sep 16].
3. Centers for Disease Control and Prevention. Preventing leptospirosis after hurricanes or flooding [\[Internet\]](#). Atlanta (GA): Centers for Disease Control and Prevention; [cited 2026 Sep 16].
4. Pan American Health Organization. Leptospirosis [\[Internet\]](#). Washington (DC): Pan American Health Organization; [cited 2026 Sep 16].
5. Wagenaar JFP, Goris MGA. [Leptospirosis](#). In: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J, et al., editors. Harrison's Principles of Internal Medicine. 22nd ed. New York: McGraw Hill; 2025. p. 1417-21.
6. Day NPJ. Leptospirosis: epidemiology, microbiology, clinical manifestations, and diagnosis [\[Internet\]](#). UpToDate; 2025 Jun [cited 2026 Sep 16].



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MEASLES

Case Management

Look for these symptoms:

- Fever
- Maculo-papular rashes
- Conjunctivitis
- Coryza
- Cough

Key Facts

- Suspected measles case definition: A patient with fever and maculopapular (non-vesicular) rash, or in whom a health care worker suspects measles.
- It is highly contagious disease with incubation period for measles is 7-21 days.
- Rash arises approximately 2-4 days after onset of fever; it consists of an erythematous, maculopapular, blanching rash, which classically begins on the face and spreads cephalocaudally (characteristic of measles) and centrifugally to involve the neck, upper trunk, lower trunk, and extremities
- The period of contagiousness is from four days before to four days after the appearance of rash.
- Complications associated with measles most commonly involve the respiratory and/or digestive tracts: otitis media, pneumonia, laryngotracheobronchitis (croup), diarrhea and stomatitis.
- Measles spread by contact with infected nasal or throat secretions (coughing or sneezing).
- Respiratory droplets can remain airborne for up to 2 hours.
- It can affect all age group but common among children.



Rashes arises approximately 2-4 days after onset of fever; it consists of an erythematous, maculopapular, blanching rash, which classically begins on the face and spreads cephalocaudally (characteristic of measles) and centrifugally to involve the neck, upper trunk, lower trunk, and extremities

Laboratory confirmation	Clinical Samples to be collected	Method	Time of collection	Remarks
	5 ml blood sample >1 year of age 1ml of blood <1 year of age	Serology/ELISA	3-28 days of rash onset/first contact	In outbreak condition, serum collected after 4 days of rash onset
	Throat swab, urine	Virology/RT-PCR	Within 3-5days of rash onset	Only taken at the time of suspected outbreak - sample should reach to National Public Health Laboratory within 24 hours of collection.
Note: The sample must be stored and transported maintaining proper cold chain (2 – 8°C).				
Treatment	- No specific anti-viral therapy. - Symptomatic treatment for prevention of complications - Treatment is supportive- antipyretics, fluids, and treatment of superinfections like pneumonia and otitis media. - Immediate administration of Vitamin A			
	In children < 6 months- 50,000 IU 6-11 months- 100,000 IU, and ≥ 12 months- 200,000 IU		In Adults 200,000 IU orally once daily for two consecutive days.	
Prevention	- IPC intervention is the first step while handling a suspected measles case. - Immediately place patients with known or clinically suspected measles in a separate area until examined or in an airborne infection isolation room (AIIR), where available. - Vaccination is the most effective way to prevent measles. - Two doses of the MR vaccines are given at 9 months and 15 months of age as per the immunization schedule of the National Immunization Program. - While treating measles, where isolation rooms are not available, a separate area or structure for clinically suspected measles patients should be used. - Isolation should continue until the case is discharged, or for 4 days after rash onset, whichever is later. - Provide patients with confirmed or clinically suspected measles with a medical-surgical facemask and separate these individuals from non-measles patients prior to or as soon as possible upon entering a healthcare facility. - Limit transport of patients with clinically suspected and confirmed measles cases, if transportation is unavoidable provide surgical/medical mask to patient, cover patients body with full sleeves gown. - Encourage patients for proper respiratory hygiene and hand hygiene. - Use disposable patient care equipment if possible. - Cleaning and disinfection of patient care equipment and linen used by patients.			
Note: Fever and Rash case must be reported to Health office or WHO-IPD Surveillance Medical Officer				

*All cases should be reported in SORMAS platform

Reference:

1. World Health Organization. Manual for the laboratory-based surveillance of measles, rubella, and congenital rubella syndrome: chapter 8. Laboratory testing in support of measles and rubella surveillance in elimination settings [Internet]. Geneva: World Health Organization; [cited 2026 Sep 16].
2. World Health Organization. Guide for clinical case management and infection prevention and control during a measles outbreak [Internet]. Geneva: World Health Organization; 2020 [cited 2026 Sep 16].



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