Travancore Medical College Hospital
A Unit of Quilon Medical Trust

JULY 2025
HIPC NEWSLETTER

In This Issue

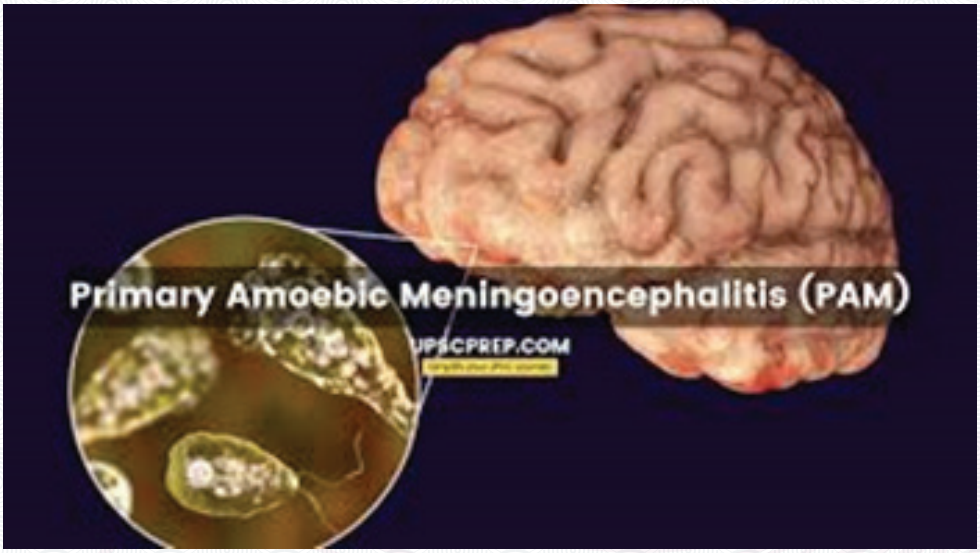
Important Dates

| World Hand Hygiene Day-May 5th
| Global Hand washing day –October 15th
| AMR Awareness Week-18-24 November
| International Infection Prevention Week –Every 3rd Week Of October

Guideline Updates Quick Links

·https://www.google.com/search?q=primary+amoebic+meningoencephalitis+&sca_esv=4bca1a4895ed980b&rlz1
·https://www.google.com/search?sca_esv=4bca1a4895ed980b&rlz=1C1FHFK_enIN1094IN1094&q=primary+amoebic+meningoencephalitis+signs+and+symptoms&udm=2&fbs=AIIjpHxU7SXXniUZfeSh

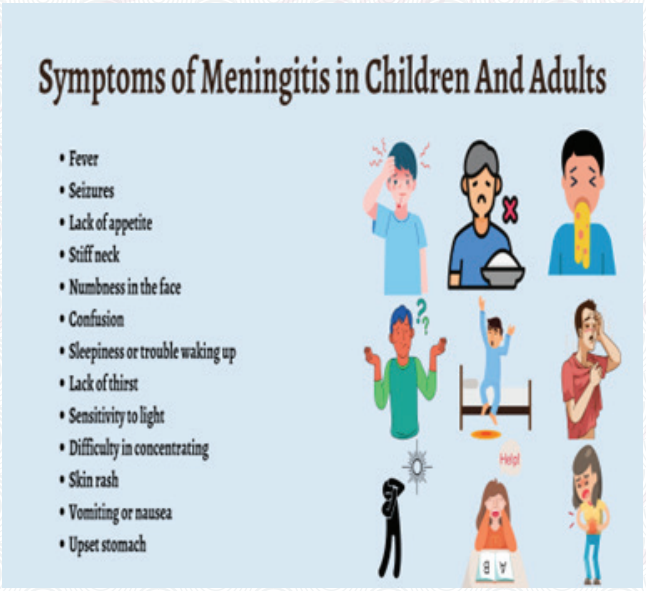
PRIMARY AMOEBIC MENINGO ENCEPHALITIS



Primary Amoebic Meningo encephalitis (PAM) is a rare and usually fatal infection of the brain caused by the Naegleria fowleri. It's commonly known as "brain-eating amoeba". Amoebic encephalitis is a rare but lethal central nervous system infection caused by free-living amoebae found in freshwater, lakes, and rivers.

SYMPTOMS AND SIGNS

- Sore throat.
- Headache and pain in the forehead.
- Hallucinations (sensory experiences that are created in the mind)
- Confusion.
- Nausea and vomiting.
- High fever.
- Neck stiffness and pain.
- Disturbances of taste and smell.



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·https://www.google.com/search?q=primary+amoebic+meningoencephalitis+risk+factors+pubmed&sca
·https://www.google.com/search?q=primary+amoebic+meningoencephalitis+diagnosis+pubmed
·https://www.google.com/search?q=primary+amebic+meningoencephalitis+treatment+cdc+guidelines&s

CAUSE

PAM typically occurs when people swim in bodies of warm freshwater (such as lakes and streams/rivers) where Naegleria fowleri is present. Very rarely, infection occurs when contaminated water from other sources enters the nose.

RISK FACTORS

- **Recreational Water Activities:**

Swimming, diving, waterskiing, and surfing in warm freshwater are the most common ways people contract PAM.

- **Nasal Irrigation:**

Using contaminated tap water for nasal irrigation, including with net pots or other devices, can also lead to infection.

- **Warm Freshwater Environments:**

The amoeba thrives in warm freshwater, and infections are more common in the summer months when water temperatures are higher.

- **Geographic Location:**

While PAM is rare, cases have been reported in various countries, with some regions like the southern United States experiencing more cases due to warmer climates and recreational water use.

- **Age and Sex:**

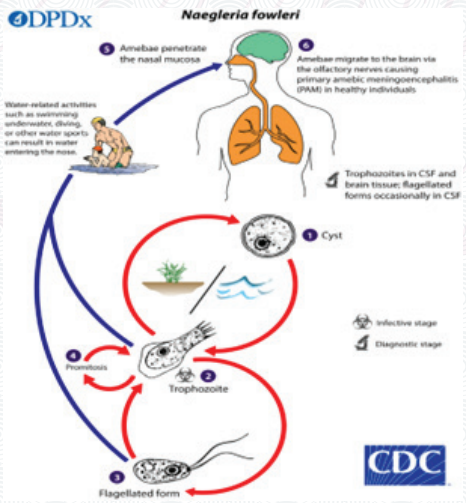
PAM most commonly affects children and young adults, with a higher incidence in males. The reason for this is not fully understood, but it may be related to increased participation in water activities.

- **Weakened Immune system**

AIDS , alcohol use disorder, diabetes, medicines that lower the immune system and other factors that affect the immune system raise the risk of meningitis.

TRANSMISSION OF PAM

Primary Amoebic Meningoencephalitis (PAM) is primarily transmitted when contaminated freshwater enters the nose, usually during recreational water activities like swimming or diving. The Naegleria fowleri ameba, which causes PAM, travels from the nasal passages to the brain via the olfactory nerves, leading to a severe and often fatal infection.



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DIAGNOSIS

- **Clinical Suspicion:**

PAM should be suspected in individuals presenting with acute, severe headache, fever, stiff neck, and altered mental status, especially after recent exposure to warm freshwater.

- **Cerebrospinal Fluid (CSF) Analysis:**
  - **Microscopic Examination:** Wet mount or stained slides of CSF may reveal motile N. fowleri trophozoites, but degeneration can hinder identification.
  - **PCR Testing**: Polymerase chain reaction (PCR) testing of CSF for N. fowleri DNA is considered the gold standard for diagnosis, offering high sensitivity and specificity.

- **Metagenomic Next-Generation Sequencing (mNGS):**

This technique can detect a wide range of pathogens, including N. fowleri, from various sample types (CSF, tissue, serum).

- **Brain Biopsy:**

In some cases, a brain biopsy may be necessary to confirm the diagnosis through histopathological examination, revealing hemorrhagic meningitis.

TREATMENT

Treatment options are limited and often unsuccessful, but early diagnosis and aggressive treatment with antifungal medications (like amphotericin B) and adjunctive therapies (like hypothermia) may improve outcomes.

Primary amoebic meningoencephalitis (PAM) treatment typically involves a combination of antifungal, antibiotic, and other medications, often including amphotericin B, rifampin, fluconazole, and miltefosine.

Table 4: Recommended Multidrug Regimen in Patients with PAM

Recommended treatment for PAM caused by *Naegleria fowleri* infection

A combination of medications is recommended for treatment of *Naegleria fowleri* infections. These drugs have been used in PAM survivors. Many have been found to have antiamebic activity against *Naegleria fowleri* in the laboratory.

Drug	Dose	Route	Maximum Dose	Duration	Comments
Amphotericin B*	1.5 mg/kg/day in 2 divided doses, THEN	IV	1.5 mg/kg/day	3 days	
	1 mg/kg/day once daily	IV		11 days	14-day course
Amphotericin B	1.5 mg once daily, THEN	Intrathecal	1.5 mg/day	2 days	
	1 mg/day every other day	Intrathecal		8 days	10-day course
Azithromycin	10 mg/kg/day once daily	IV/PO	500 mg/day	28 days	
Fluconazole	10 mg/kg/day once daily	IV/PO	600 mg/day	28 days	
Rifampin	10 mg/kg/day once daily	IV/PO	600 mg/day	28 days	
Miltefosine**	Weight<45 kg 50 mg BID Weight>45kg 50 mg TID	PO	2.5 mg/kg/day	28 days	50 mg tablets
Dexamethasone	0.6 mg/kg/day in 4 divided doses	IV	0.6 mg/kg/day	4 days	

*Conventional amphotericin (AMB) is preferred. When AMB was compared with liposomal AMB against *Naegleria fowleri*, the minimum inhibitory concentration (MIC) for AMB was 0.1 µg/mL, while that of liposomal AMB was 10x higher at 1 µg/mL. Liposomal AMB was found to be less effective in the mouse model and in in vitro testing than the more toxic form of AMB. AMB methyl ester was also found to be less effective in the mouse model. Because the prognosis of *Naegleria fowleri* infection is extremely poor, consider aggressive treatment.

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PREVENTION

> Avoidance of diving and jumping into stagnant fresh water

> Use nose plugs for unavoidable exposures or pinching your nose shut when diving or swimming in fresh waster

> When participating in water-related activities, avoid digging or stirring up the sediment

> Use boiled, filtered or sterile water for nasal or sinus irrigation, not tap water

> Wading pools should be emptied each day

> Flush still water from hoses before letting children play with them

KEY FACTS

- Primary amebic meningoencephalitis is rare, usually fatal.
- The infection is acquired when swimming in contaminated fresh water; Naegleria fowleri enters the CNS via olfactory neuroepithelium and the cribriform plate.
- Diagnostic tests should include a wet mount and Giemsa-stained specimen of CSF.
- Treat the infection with multiple antimicrobial agents, including miltefosine; if needed, treat seizures and cerebral edema with antiseizure drugs and dexamethasone.
- Survival is rare but, in recent cases, has been attributed to early diagnosis and treatment in combination with aggressive management of cerebral edema.

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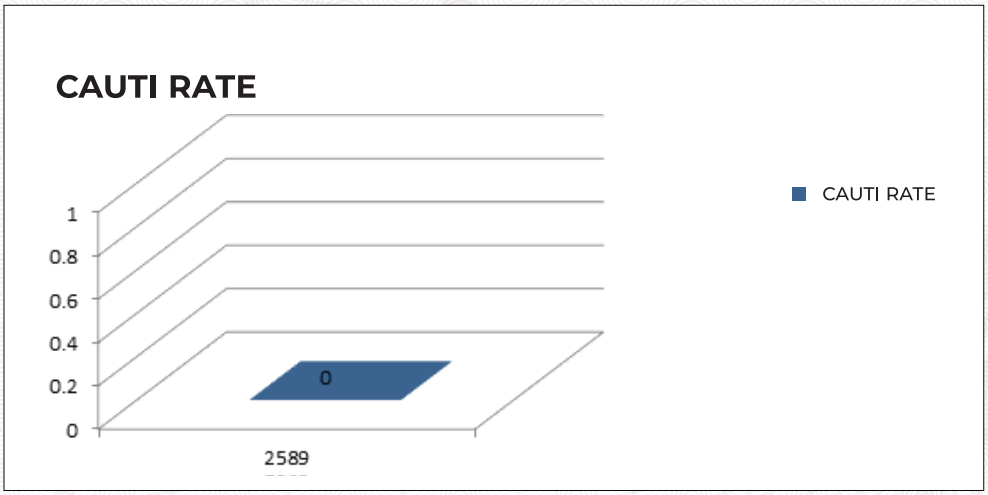
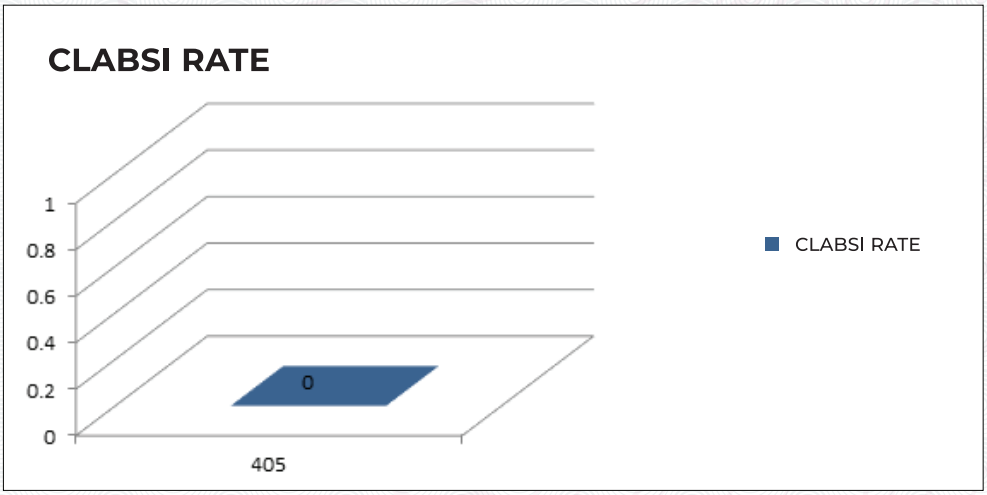
HAI DATA - JUNE 2025

CAUTI RATE - JUNE 2025



CLABSI RATE - JUNE 2025



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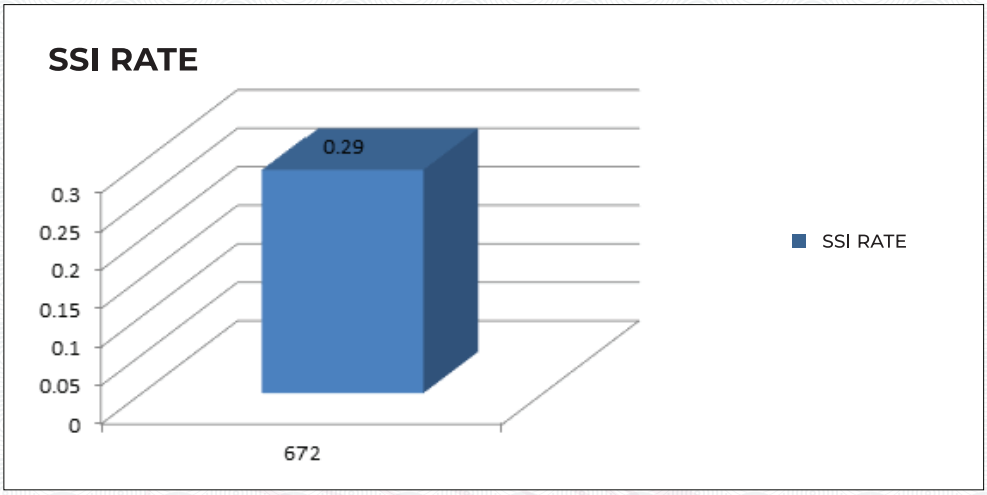
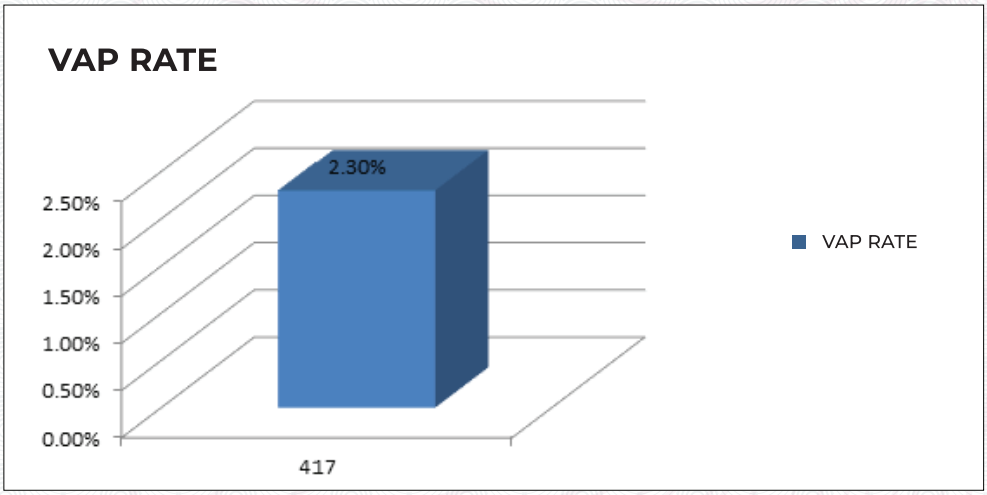
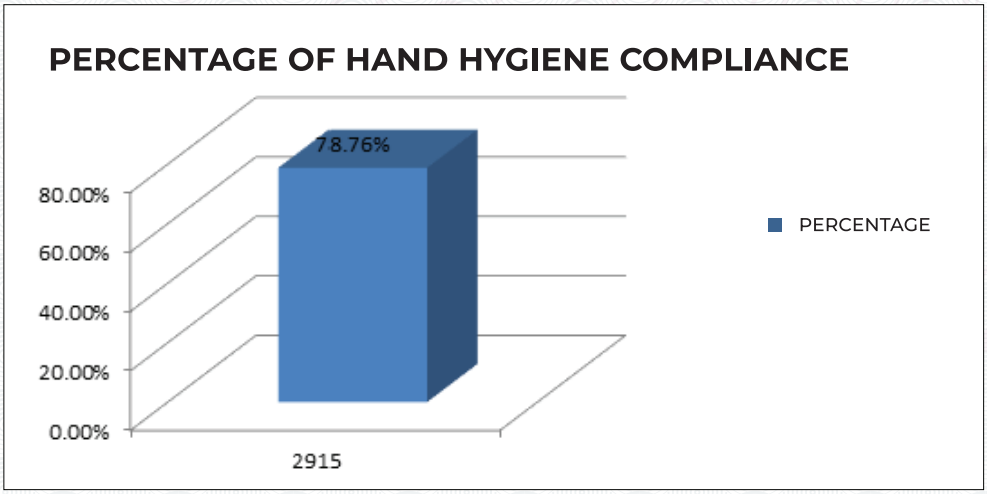
SSI RATE - JUNE 2025



VAP RATE - JUNE 2025



PERCENTAGE OF COMPLIANCE TO HAND HYGIENE- JUNE 2025



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LINK NURSES CERTIFICATION COURSE HELD ON 8.7.2025