

## NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

**Submission Id:** 5965

### **Title**

*Unveiling the Epidemiological Trends of Naegleria Fowleri: A Retrospective Case Series Analysis*

### **Priority 1 (Research Category)**

Infectious Diseases (not respiratory tract)

### **Presenters**

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### **Abstract**

Context: *Naegleria fowleri*, often termed the "brain-eating amoeba," is a free-living amoeba responsible for causing primary amoebic meningoencephalitis (PAM), a rare but devastating infection of the CNS. *N. fowleri* invades the CNS by crossing the nasal mucosa during contact with contaminated water. PAM progresses rapidly, causing extensive inflammation, necrosis, and edema, which typically results in death within 7 to 10 days post-exposure.

Objective: Determine the epidemiological trends for patients infected with *N. fowleri*.

Study Design and Setting: Retrospective case series.

Population Studied – The Vizient® Clinical Data Base was queried for inpatient discharges between January 2016 and February 2024 with an ICD-10-CM diagnosis code for naegleriasis (B60.2).

Outcome Measures: Number of cases, LOS, mortality rate.

Results: This retrospective case series involved 22 patients with an average age of 37 (3.3 to 79.6 years); 27% were 17 or younger, 41% were 18 to 50, and 32% were 51 to 79. Most patients were male (77%) and white (73%), with 27% being black or of other races. 50% of patients had a central line, 23% were intubated, and 50% had an EVD. The average LOS was 12.5 days, and the average ICU duration was five days. Antimicrobial therapy was a common intervention, with amphotericin-B (77.8%), Fluconazole (77.8%), Rifampin (50%), and Azithromycin (77.8%) being the most frequently used medications. Eleven (48%) patients expired, and 43% were discharged home or to a post-acute facility. For patients who expired, the average days to expiration was six days.

Conclusions: Our retrospective analysis underscores the critical nature of *N. fowleri* infections, reporting a broader age spectrum of affected individuals than traditionally reported. With a significant portion of

the cases found in adults up to 79, our study challenges the prevailing understanding that primarily younger populations are at risk, e.g., the CDC reports a median age of 11. The in-hospital mortality rate of 50% observed in our cohort, while still high, signals a potential improvement compared to the near-universal fatality rate historically associated with this condition. This improvement might reflect enhanced clinical awareness, more rapid diagnostic testing, and the introduction of novel therapeutic approaches. Our findings suggest the need for ongoing research into risk factors, diagnostic strategies, and treatment modalities to better understand and combat this lethal disease.

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