

Meningitis and Septicemia Mapping Network (MenMap): First Quarter Infographic

2023/2024

MenMap's Focus

The Meningitis and Septicemia Mapping Network (MenMap) focuses on expanding knowledge of vaccine-preventable Invasive Bacterial Diseases (IBD). These causative agents include:

- *Neisseria meningitidis* (*N. meningitidis*)
- *Streptococcus pneumoniae* (*S. pneumoniae*)
- *Haemophilus influenzae* (*H. influenzae*)

MenMap Goals

- To bridge gaps between research, clinical practice, and public health policy across North Africa and the Middle East, with plans to expand further.
- To implement real-time PCR testing to improve IBD diagnosis.

MenMap Kick Off Date

December 4, 2023



Iraq CPHL team performing testing real-time PCR testing

Where MenMap Currently Operates

Egypt



4 Hospitals:

- Cairo governorate:
Abbasia Fever Hospital
- Sharkia: *Zagazig Fever Hospital*
- Sohag governorate:
Sohag Fever Hospital
- The Red Sea region:
Hurghada Fever Hospital

Iraq



8 Hospitals:

- Baghdad, Al-Karkh and Al-Rusafa districts:
 1. *Al Kadhimiya Pediatric Hospital*
 2. *Central Teaching Hospital of Pediatrics*
 3. *Ibn Al Baladi Hospital for Pediatrics*
 4. *Al-Elwia Pediatrics Hospital*
- Kirkuk governorate: *The Pediatric Hospital of Kirkuk*
- Basra: *Al-Basra Hospital for Maternity and Pediatrics*
- Al-Najaf Al-Ashraf governorate: *Al-Zahraa Teaching Hospital for Maternity and Pediatrics*
- Holy Karbala: *Karbala Teaching Hospital for Pediatrics*

Jordan



4 Hospitals:

- Eastern North: *Zarqa Hospital*
- South: *Karak Hospital*
- North: *Princess Rahme Hospital*
- The central region and capital, Amman: *Al Basheir Hospital*

What Institutions MenMap Currently Serves



Governmental hospitals



Central Public Health Laboratories (CPHLs)

What MenMap Does



Case enrolment of Meningitis suspected patients from 1 month to 18 years of age



Collection and data entry



Sample collection (Cerebrospinal fluid (CSF) and blood)



Polymerase chain reaction (PCR) testing

The Outcomes in Numbers (December 2023 - March 2024)

1. Egypt

Surveillance: 4 sentinel hospitals: Abbasia, Zagazig, Sohag, Hurghada (Figure 1.1)

Enrolled Cases: 102 (Dec 2023 - March 2024)

Gender Distribution: 60% males, 40% females (Figure 1.2)

Age Group Distribution with Most Suspected Cases: 5-14 years (49 cases) (Figure 1.3)

Causative agent of confirmed cases: 17.6% (17 *S. pneumoniae* and 1 *H. influenzae*)

Figure 1.1: Distribution of Suspected Meningitis Cases by Targeted Hospitals in Egypt, Dec 2023-March 2024

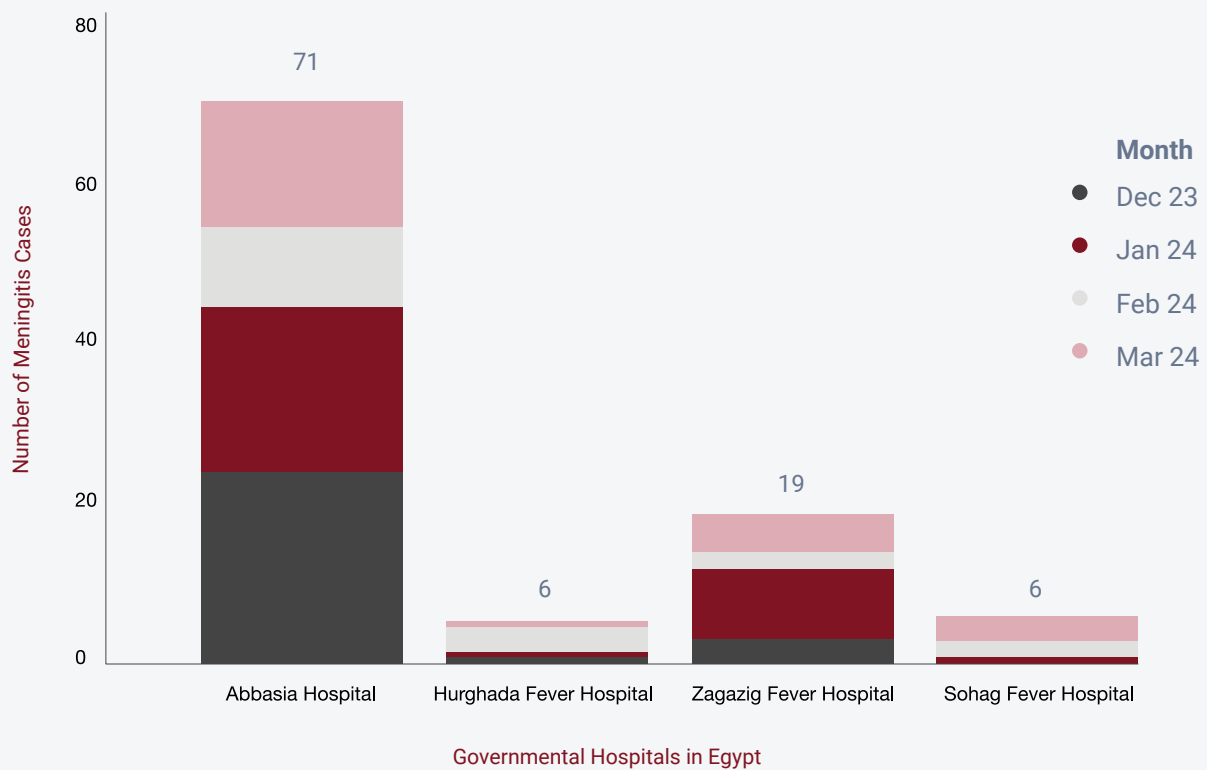


Figure 1.2: Gender Distribution of Suspected Meningitis Cases in Egypt, Dec 2023-March 2024

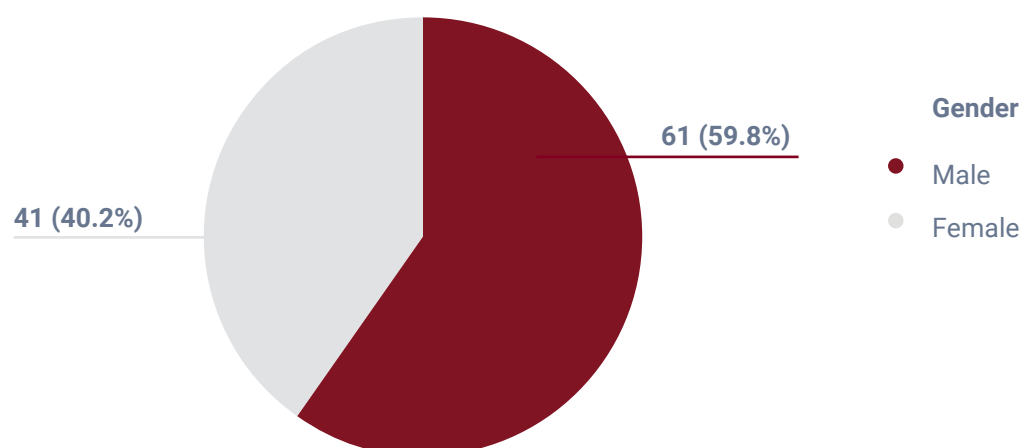


Figure 1.3: Count of Suspected Meningitis Cases According to Age Group in Egypt, Dec 2023-March 2024

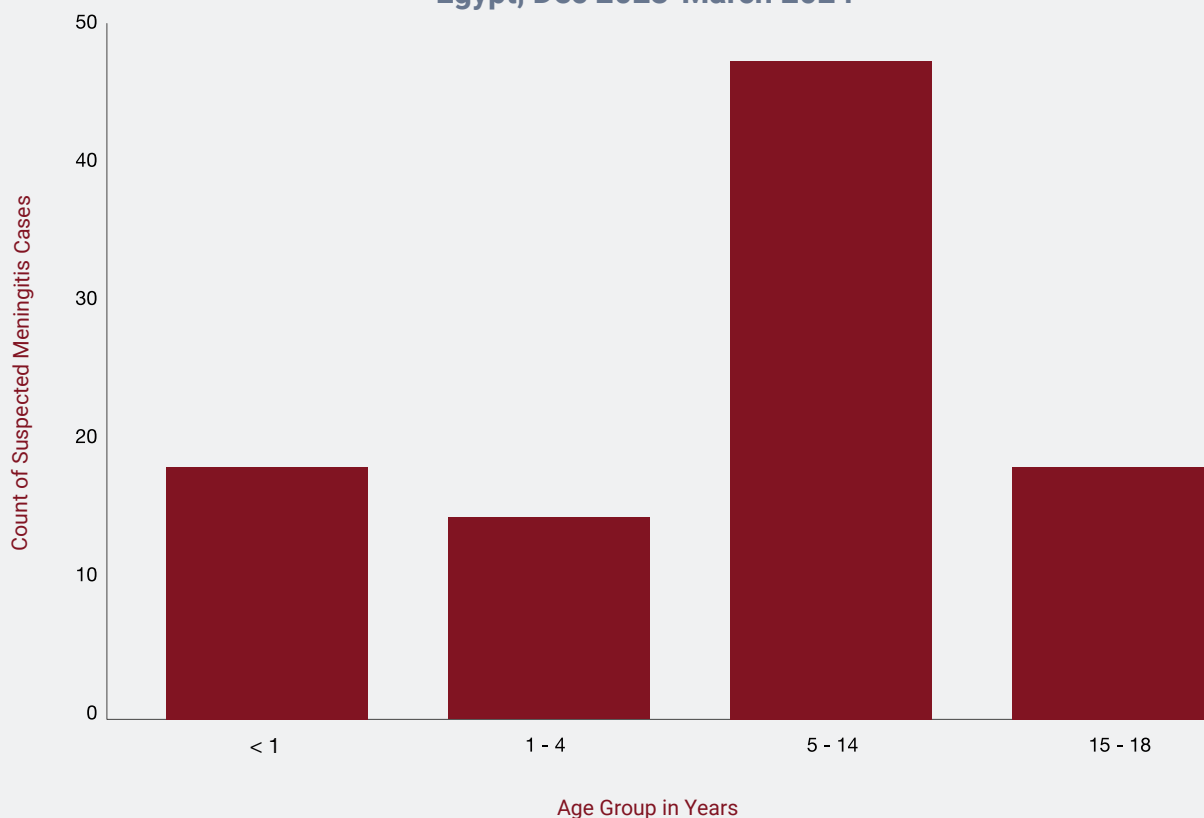
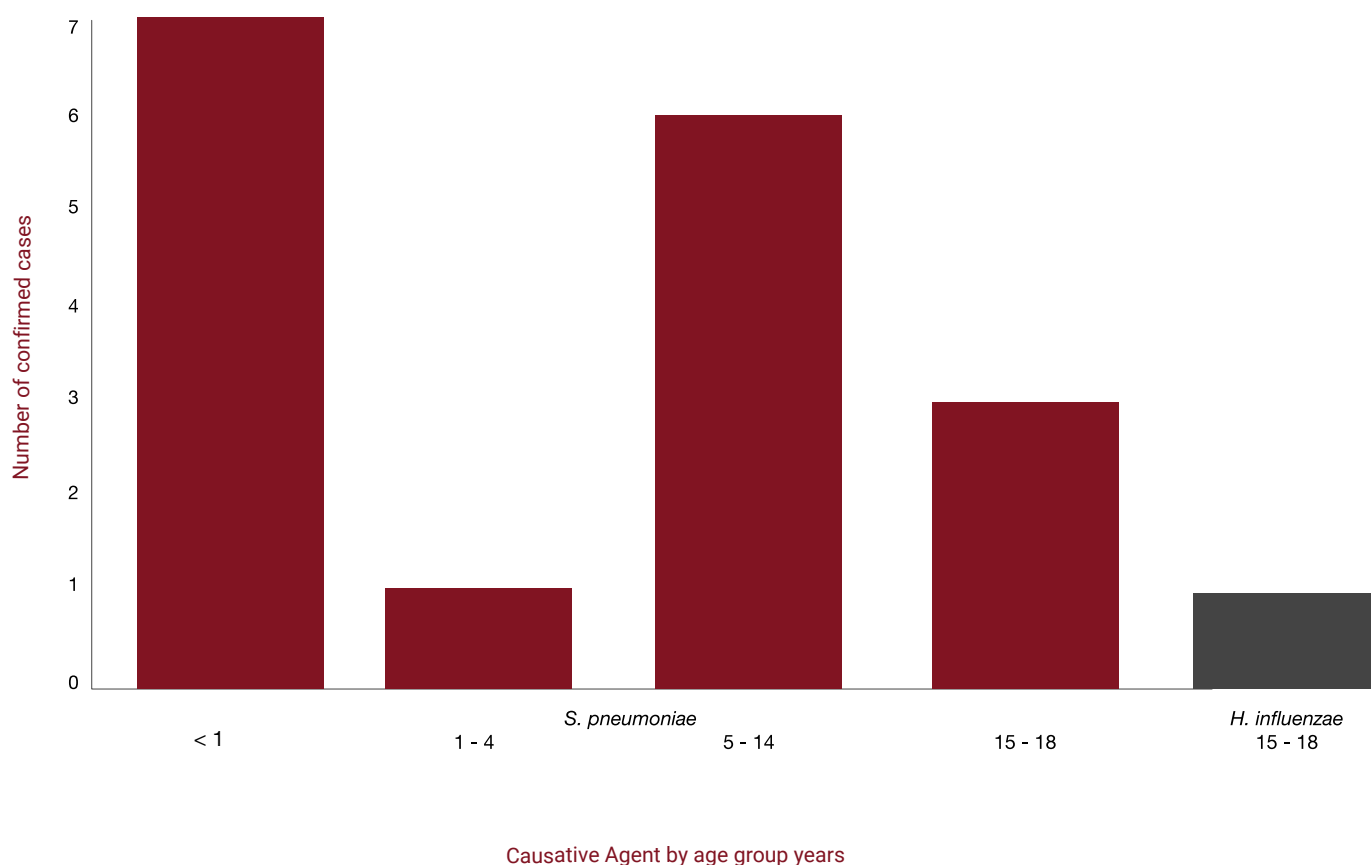


Figure 1.4: Laboratory-confirmed Bacterial Meningitis Cases According to Age Group in Egypt, Dec 2023-March 2024



2. Iraq

Surveillance: 8 hospitals with 4 in Baghdad, Kirkuk, Basra, Najaf, and Karbala (Figure 2.1)

Enrolled Cases: 210

Gender Distribution: 56% males, 44% females (Figure 2.2)

Age Group Distribution with Most Suspected Cases: 5-14 years (84 cases) (Figure 2.3)

Causative agent of confirmed cases: 20.5% (36 *S. pneumoniae*, 6 *H. influenzae*, 1 *N. meningitidis*) (Figure 2.4)

Figure 2.1: Distribution of Suspected Meningitis Cases by Targeted Hospital in Iraq, Dec 2023-March 2024

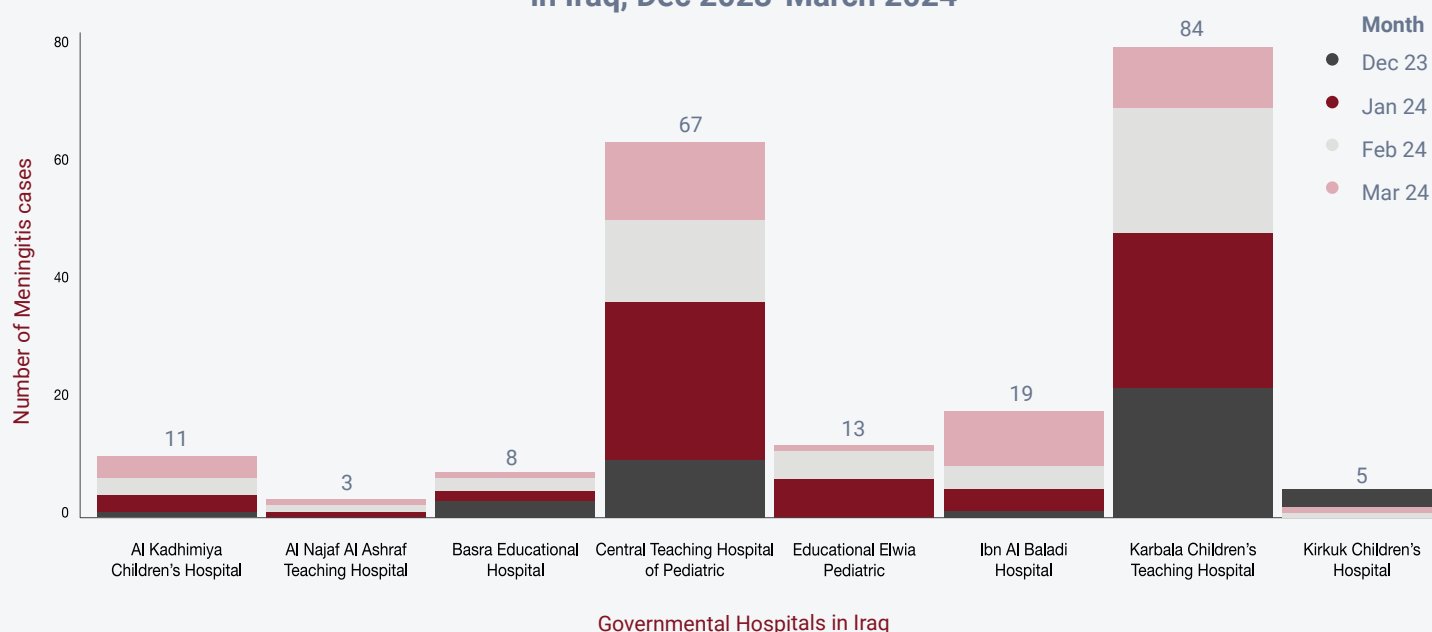


Figure 2.2: Gender Distribution of Meningitis Suspected Case in Iraq, Dec 2023-March 2024

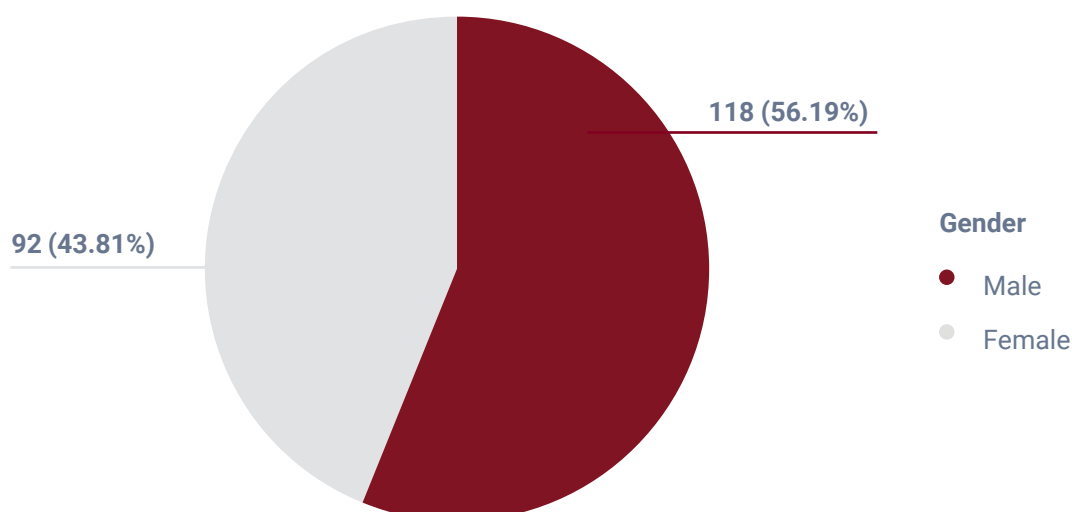


Figure 2.3: Number of Suspected Meningitis According to Age Group in Iraq, Dec 2023-March 2024

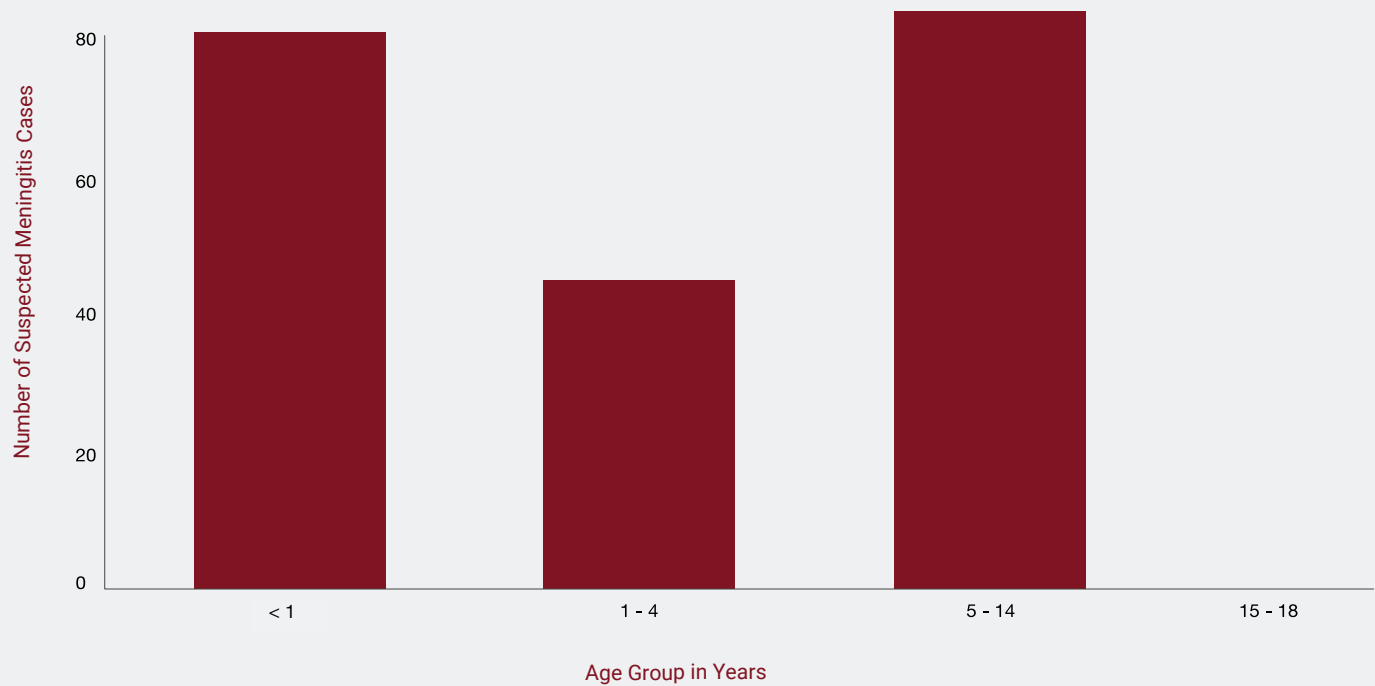
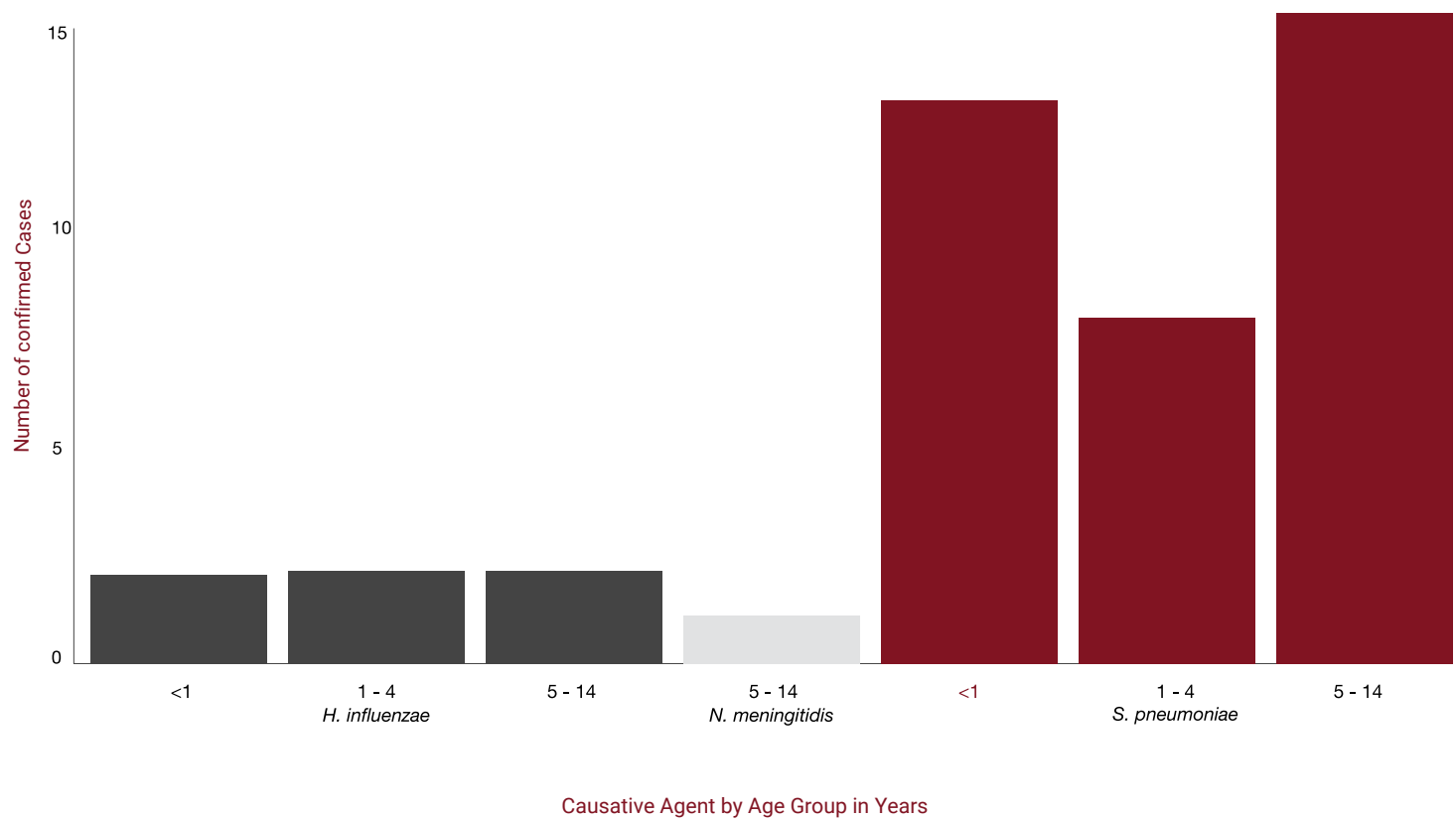


Figure 2.4: Laboratory-confirmed Bacterial Meningitis According to Age Group in Iraq, Dec 2023-March 2024



3. Jordan

Surveillance: 4 hospitals: Zarqa, Karak, Princess Rahma, Al Basheir (Figure 3.1)

Enrolled Cases: 289

Gender Distribution: 60% males, 40% females (Figure 3.2)

Age Group Distribution with Most Suspected Cases: 1 month - 1 year: 202 (Figure 3.3)

Causative agent of confirmed cases: 1.7% (5 *S. pneumoniae*) (Figure 3.4)

Figure 3.1: Distribution of Suspected Meningitis Cases by Targeted Hospitals in Jordan, Dec 2023-March 2024

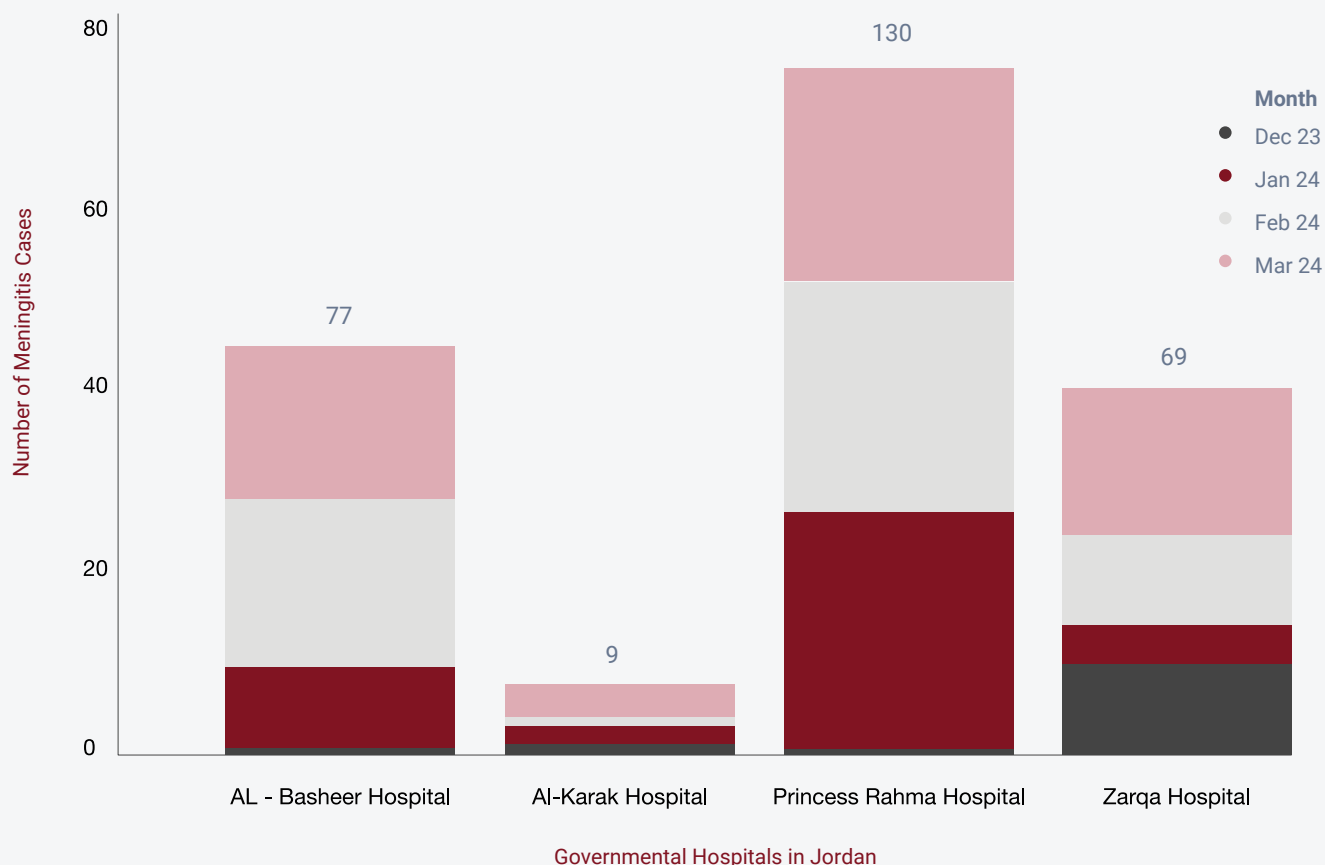


Figure 3.2: Gender Distribution of Meningitis Suspected Cases in Jordan, Dec 2023-March 2024

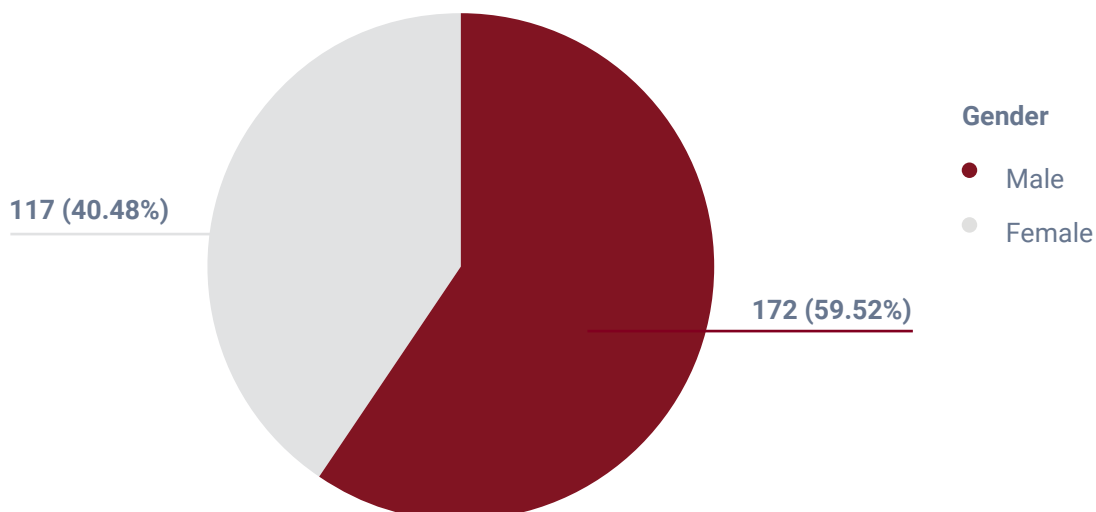


Figure 3.3: Count of Suspected Meningitis According to Age Group in Jordan, Dec 2023-March 2024

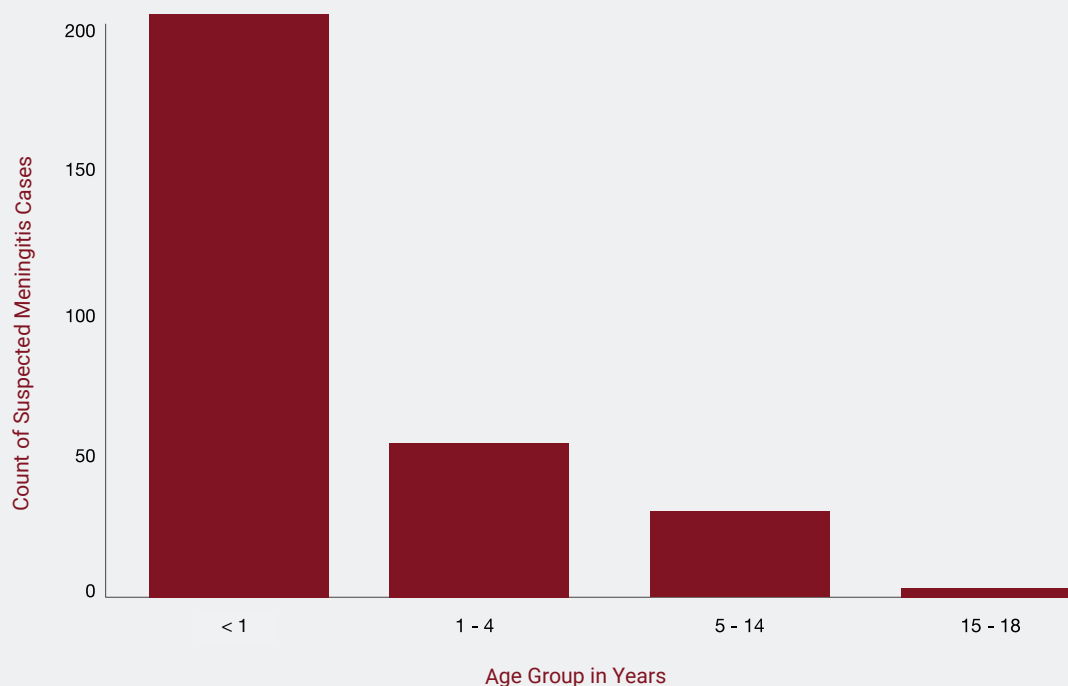
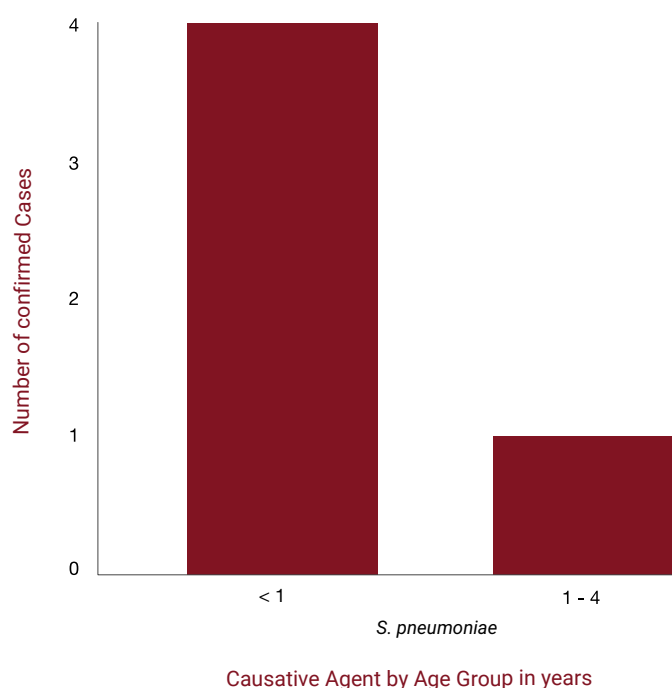


Figure 3.4: Laboratory-confirmed Bacterial Meningitis According to Age Group in Jordan, Dec 2023-March 2024



The Findings

Early results from MenMap indicate that targeted surveillance and improved diagnostic techniques may offer more accurate and timely detection of meningitis and septicemia cases compared to traditional methods, thereby enhancing public health interventions and policy development. The data and study reveal that *Streptococcus pneumoniae* seems to be the predominant bacterial pathogen across the three countries surveyed.