# Northwest of Syria Cholera Outbreak

## Situation Report No.20

## Epidemiological Week - 06 (5 Feb – 11 Feb 2023)

Date of Onset of Outbreak: 16 September 2022

Reporting Date of outbreak: 17 September 2022

Confirmation Date: 19 September 2022

**Suspected Cases: 46921**

**Confirmed Cases: 567**

**Cholera Deaths : 20**

**Case Fatality Rate: 0.04%**

**NWS Attack Rate: 1.01%**

### Key Highlights

Cumulatively, a total of **46921 suspected** cases (**19062** in Aleppo governorate, **27859** in Idleb governorate) including **567 confirmed** have been reported by EWARN team since 16 September, including **20 deaths** case.

- The highest number of cases were reported in Harim district (14683) and Idleb district (8084) in Idleb governorate, then Jebel Saman district (4582), Azaz district (4453), and Jarablus district (4019) in Aleppo governorate.
- 8112 total suspected cases (including 201 new cases in Epi week 06 - 2023) were reported from camps.
- 44.35 % Of the suspected cases are in the age group <5 years. Males are 52% of the total and females are 48%.
- Since the outbreak started, surveillance and reporting from facilities are being supported and strengthened. For better understanding of the background and context, please read pervious sitreps.
- Line list is shared with WHO and WASH team to aid Targeted response at a household level being conducted for identified cases.
- Active case search is ongoing, especially in the camps.

## Situation Updates

### 1. Epidemiology

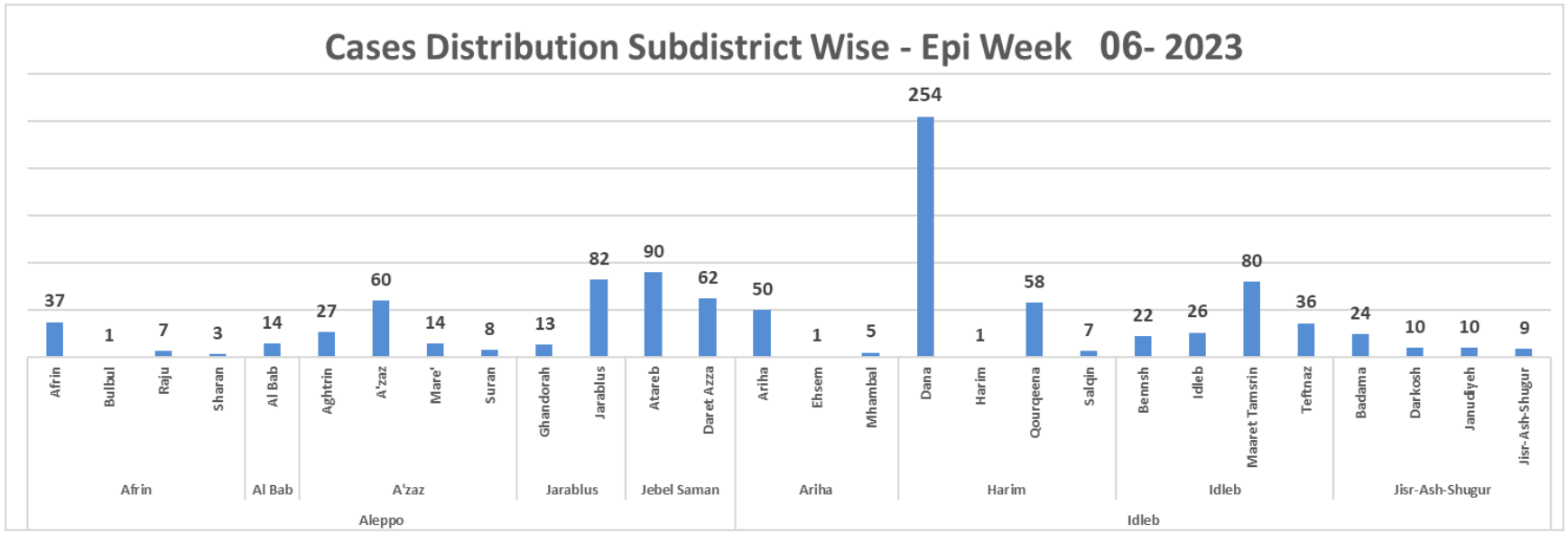
Updated case definition: A resident of outbreak areas with sudden onset of acute watery diarrhea with or without vomiting.

In Epi week 06 - 2023, **1011 suspected cases of cholera were reported, including 1 positive case**. The affected governorates are Aleppo (418 suspected, 1 confirmed), and Idleb (593 suspected, 0 confirmed).

The age group less than 5 reported 44.7 %, while the age group more than 60 reported 22.6 % of the total

No deaths were reported in epi week 5. (a total of 20 deaths).

Dana subdistrict in Idled governorate reported the highest number of cases (254), and Atareb subdistrict in Aleppo governorate (90).

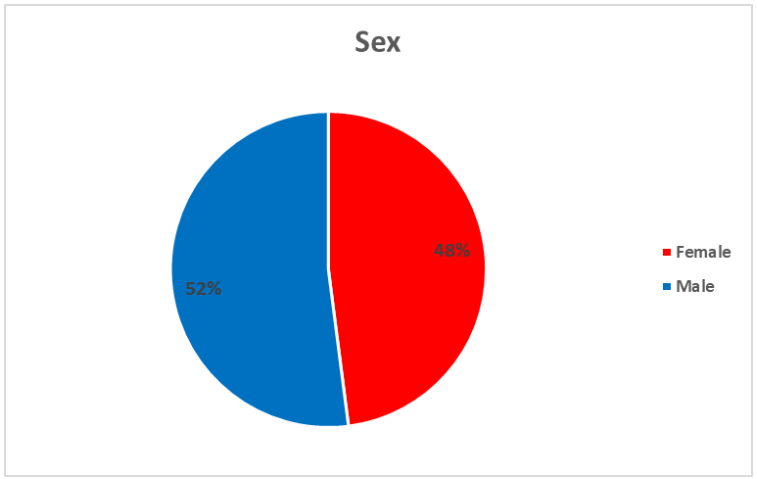


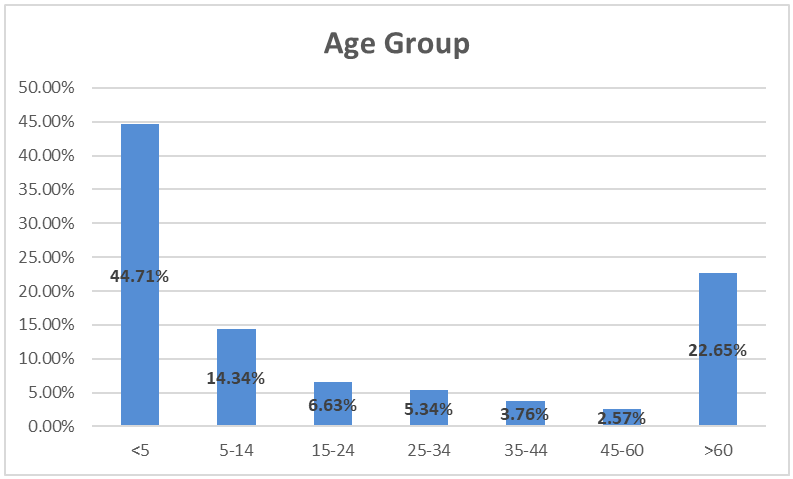
The overall sex distribution of the suspected cases is 52% Male, and 48% Female.

100% of the line listed cases were presented as Acute Diarrhea, 21% with vomiting, 5% as rice watery diarrhea, and 7% were dehydrated.

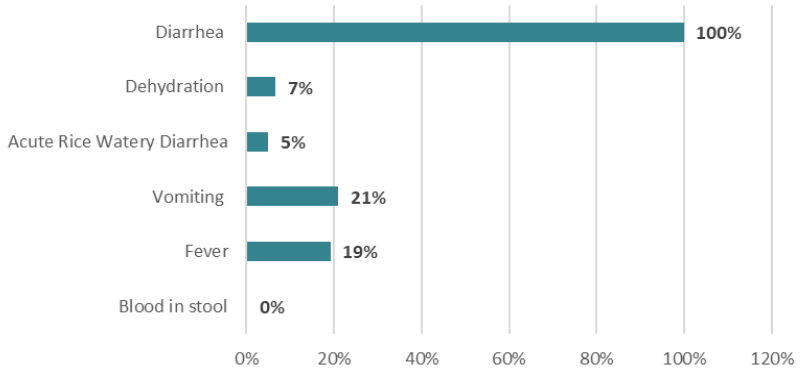
20% of the total cases live in camps (7911), and 79% out of camps (27312). (6110 of the total line listed cases are unknown)

As the outbreak progresses, sensitivity should be increased by including smaller age groups and mild/moderate symptom groups in order to estimate the burden of the outbreak. According to WHO, in areas where a cholera outbreak has been confirmed, any person presenting with or dying from acute watery diarrhea is considered a suspected cholera case. The age group less than 5 years was 44.34%.

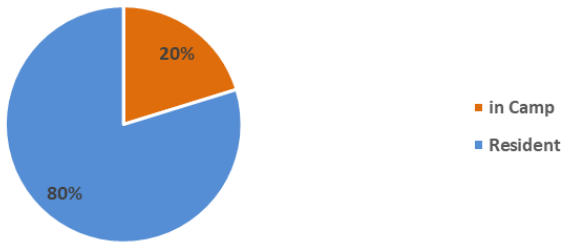


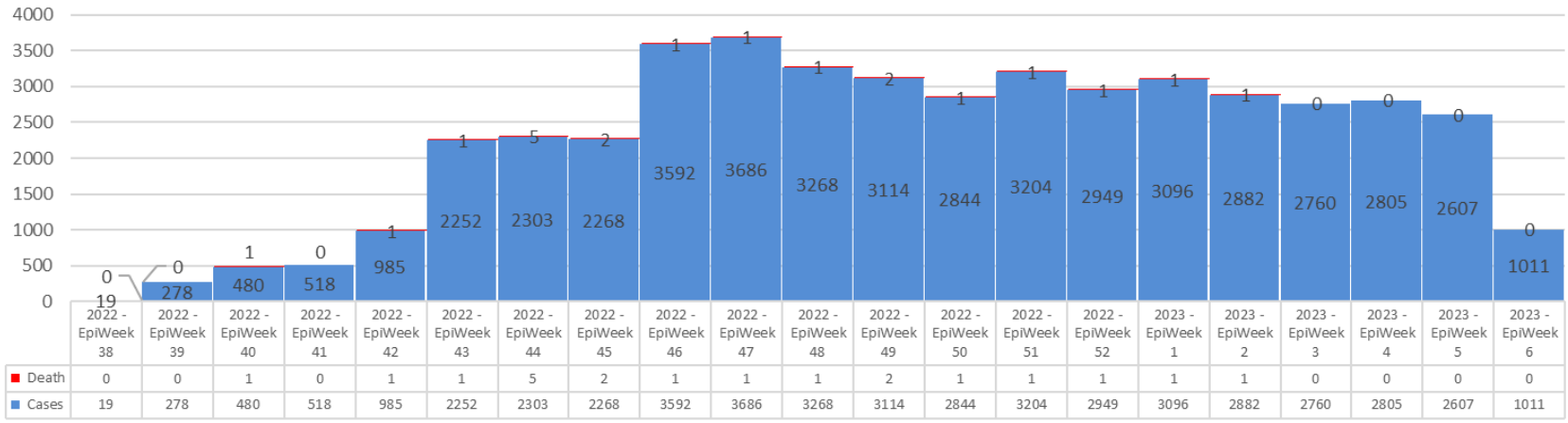
## Signs and Symptoms




## Cholera Cases Residency Distribution

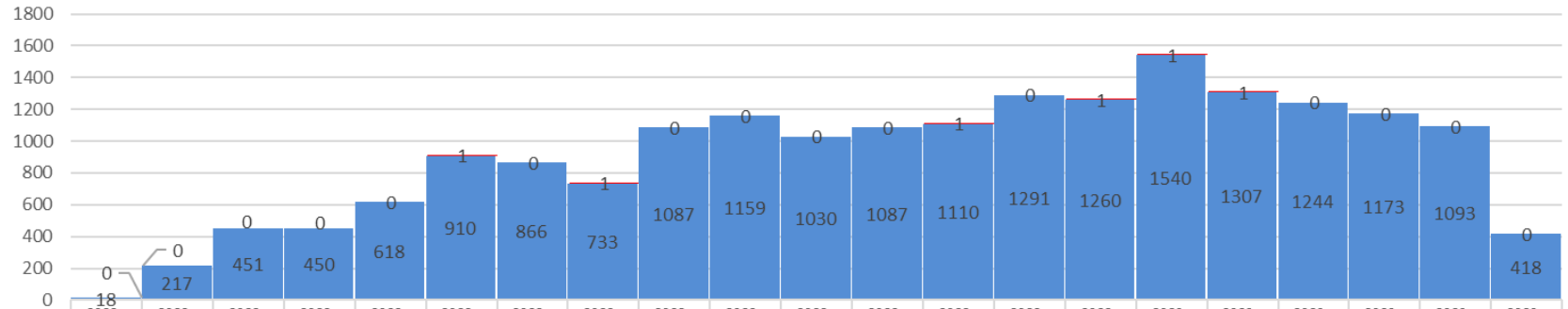



## EPI Curve - Reporting Date - NWS



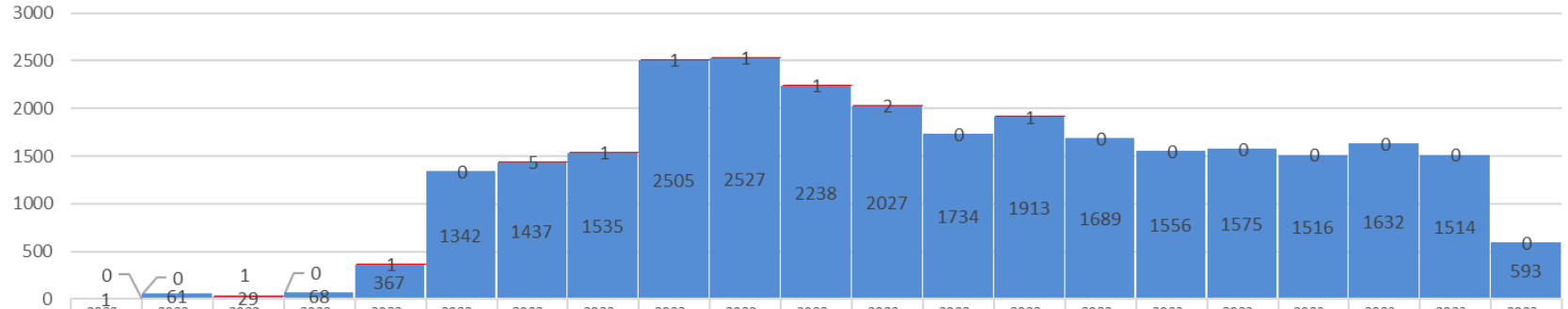

| | 2022 - EpiWeek 38 | 2022 - EpiWeek 39 | 2022 - EpiWeek 40 | 2022 - EpiWeek 41 | 2022 - EpiWeek 42 | 2022 - EpiWeek 43 | 2022 - EpiWeek 44 | 2022 - EpiWeek 45 | 2022 - EpiWeek 46 | 2022 - EpiWeek 47 | 2022 - EpiWeek 48 | 2022 - EpiWeek 49 | 2022 - EpiWeek 50 | 2022 - EpiWeek 51 | 2022 - EpiWeek 52 | 2023 - EpiWeek 1 | 2023 - EpiWeek 2 | 2023 - EpiWeek 3 | 2023 - EpiWeek 4 | 2023 - EpiWeek 5 | 2023 - EpiWeek 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Death | 0 | 0 | 1 | 0 | 1 | 1 | 5 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Cases | 19 | 278 | 480 | 518 | 985 | 2252 | 2303 | 2268 | 3592 | 3686 | 3268 | 3114 | 2844 | 3204 | 2949 | 3096 | 2882 | 2760 | 2805 | 2607 | 1011 |

## EPI Curve - Reporting Date - Aleppo

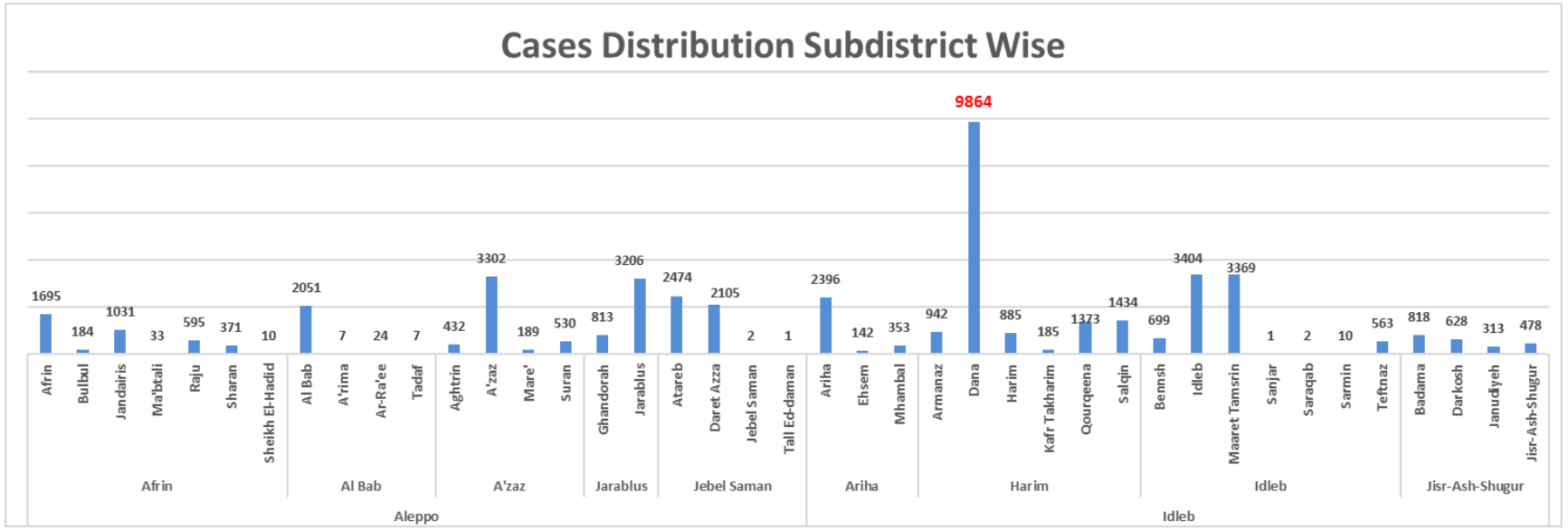



| | 2022 - EpiWeek 38 | 2022 - EpiWeek 39 | 2022 - EpiWeek 40 | 2022 - EpiWeek 41 | 2022 - EpiWeek 42 | 2022 - EpiWeek 43 | 2022 - EpiWeek 44 | 2022 - EpiWeek 45 | 2022 - EpiWeek 46 | 2022 - EpiWeek 47 | 2022 - EpiWeek 48 | 2022 - EpiWeek 49 | 2022 - EpiWeek 50 | 2022 - EpiWeek 51 | 2022 - EpiWeek 52 | 2023 - EpiWeek 1 | 2023 - EpiWeek 2 | 2023 - EpiWeek 3 | 2023 - EpiWeek 4 | 2023 - EpiWeek 5 | 2023 - EpiWeek 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Death | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Cases | 18 | 217 | 451 | 450 | 618 | 910 | 866 | 733 | 1087 | 1159 | 1030 | 1087 | 1110 | 1291 | 1260 | 1540 | 1307 | 1244 | 1173 | 1093 | 418 |

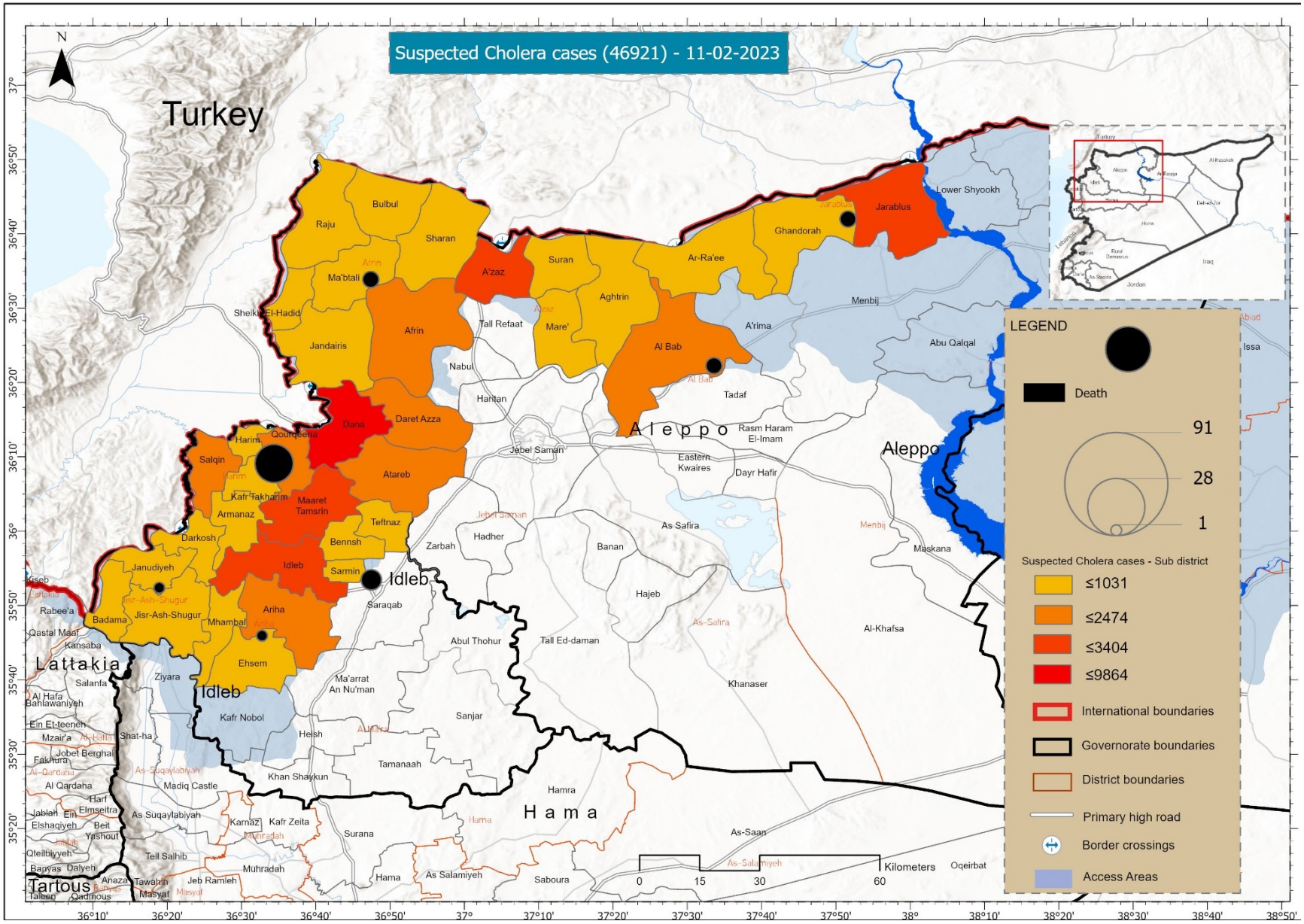
## EPI Curve - Reporting Date - Idleb




| | 2022 - EpiWeek 38 | 2022 - EpiWeek 39 | 2022 - EpiWeek 40 | 2022 - EpiWeek 41 | 2022 - EpiWeek 42 | 2022 - EpiWeek 43 | 2022 - EpiWeek 44 | 2022 - EpiWeek 45 | 2022 - EpiWeek 46 | 2022 - EpiWeek 47 | 2022 - EpiWeek 48 | 2022 - EpiWeek 49 | 2022 - EpiWeek 50 | 2022 - EpiWeek 51 | 2022 - EpiWeek 52 | 2023 - EpiWeek 1 | 2023 - EpiWeek 2 | 2023 - EpiWeek 3 | 2023 - EpiWeek 4 | 2023 - EpiWeek 5 | 2023 - EpiWeek 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Death | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cases | 1 | 61 | 29 | 68 | 367 | 1342 | 1437 | 1535 | 2505 | 2527 | 2238 | 2027 | 1734 | 1913 | 1689 | 1556 | 1575 | 1516 | 1632 | 1514 | 593 |

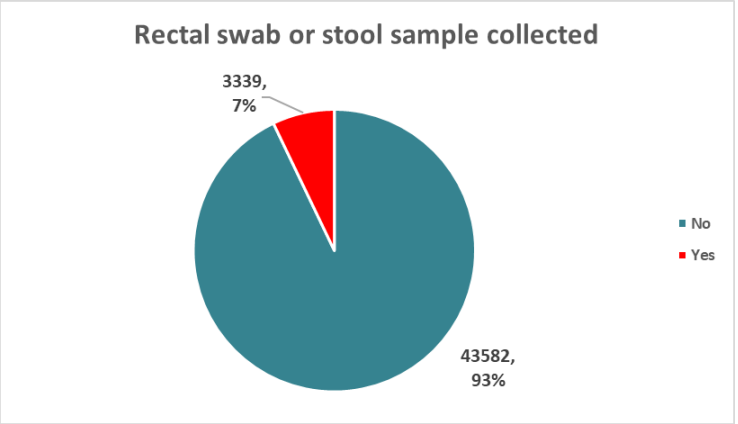


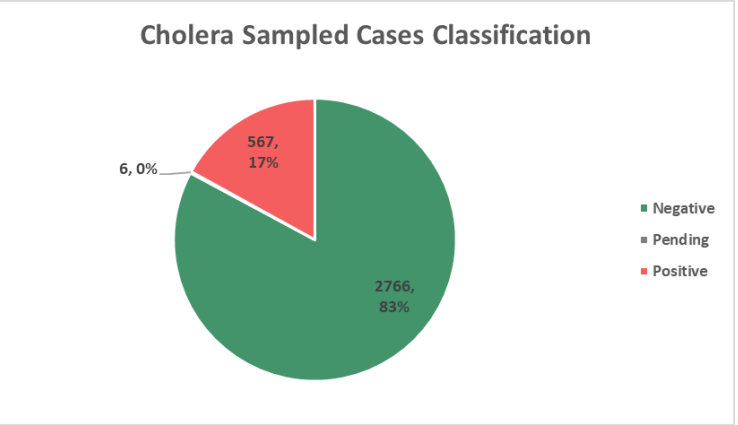

| Epi Week | Governorate | District | Date of Onset | Population | New cases | Cumulative Cases | New Death | Cumulative Deaths | Case Fatality Rate | Incidence Rate | Attack Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Up to W06 - 2023 | Idleb | Ariha | 20-Sep | 185,668 | 56 | 2891 | 0 | 1 | 0.03% | 30.2 | 1.56% |
| | | Harim | 6-Sep | 1,586,820 | 320 | 14683 | 0 | 9 | 0.06% | 20.2 | 0.93% |
| | | Idleb | 14-Sep | 713,933 | 164 | 8048 | 0 | 3 | 0.04% | 23.0 | 1.13% |
| | | Jisr-Ash-Shugur | 25-Sep | 310,973 | 53 | 2237 | 0 | 1 | 0.04% | 17.0 | 0.72% |
| | Aleppo | A'zaz | 9-Sep | 648,600 | 109 | 4453 | 0 | 0 | 0.00% | 16.8 | 0.69% |
| | | Afrin | 21-Sep | 467,090 | 48 | 3919 | 0 | 2 | 0.05% | 10.3 | 0.84% |
| | | Al Bab | 17-Sep | 339,812 | 14 | 2089 | 0 | 2 | 0.10% | 4.1 | 0.61% |
| | | Jarablus | 12-Sep | 121,938 | 95 | 4019 | 0 | 2 | 0.05% | 77.9 | 3.30% |
| | | Jebel Saman | 10-Sep | 251,785 | 152 | 4582 | 0 | 0 | 0.00% | 60.4 | 1.82% |
| | Total | | | 4,626,619 | 1011 | 46921 | 0 | 20 | 0.04% | 21.9 | 1.01% |


Suspected Cholera cases (46921) - 11-02-2023
N
Turkey
Lattakia
Idleb
Aleppo
Hama
Tartous
Raju
Bulbul
Sharan
Afrin
Ma'btali
Sheikh El-Hadid
Jandairis
A'zaz
Suran
Aghtrin
Tall Refaat
Mare'
Ar-Ra'ee
Ghandorah
Jarablus
Lower Shyookh
Menbij
A'rima
Abu Qalqal
Al Bab
Tadaf
Nabul
Hantan
Jebel Saman
Eastern Kwaires
Rasm Haram El-Imam
Dayr Hafir
As Safira
Banan
Hajeb
Tall Ed-daman
Abul Thohur
Khanaser
Al-Khafsa
Maskana
Issa
Abiad
Zarbah
Hadher
Saraqab
Ma'arrat An Nu'man
Sanjar
Kafr Nobol
Heish
Tamanaah
Khan Shaykun
Hamra
As-Saan
Surana
Muhradah
Hama
As Salamiyeh
Saboura
Oqeirbat
Qourqeena
Harim
Salqin
Daret Azza
Dana
Atareb
Kafr Takharim
Maaret Tamsrin
Armanaz
Teftnaz
Bennsh
Darkosh
Janudiyeh
Sarmin
Ariha
Mhambal
Jisr-Ash-Shugur
Badama
Rabee'a
Qastal Maaf
Kansaba
Ziyara
Ehsem
Salanfa
Al Hafa
Bahlawaniyeh
Ein Et-teneh
Mzair'a
Shat-ha
Jobet Berghal
Fakhura
Al Qardaha
Madiq Castle
As Suqaylabiyah
Harf
Jableh
Ein Elmseitra
Elshaqiyeh
Beit Yashout
Qteilbiyyeh
Tell Salhib
Banyas
Dalyeh
Anaza
Tawahin
Masyaf
Jeb Ramleh
Kafr Zeita
Karnaz
Kisob
Tafaklis
Taleen
Qadmous
LEGEND
Death
91
28
1
Suspected Cholera cases - Sub district
≤1031
≤2474
≤3404
≤9864
International boundaries
Governorate boundaries
District boundaries
Primary high road
Border crossings
Access Areas
0
15
30
60
Kilometers
36°10'
36°20'
36°30'
36°40'
36°50'
37°
37°10'
37°20'
37°30'
37°40'
37°50'
38°
38°10'
38°20'
38°30'
38°40'
38°50'
37°
36°50'
36°40'
36°30'
36°20'
36°10'
36°
35°50'
35°40'
35°30'
35°20'

## Laboratory:

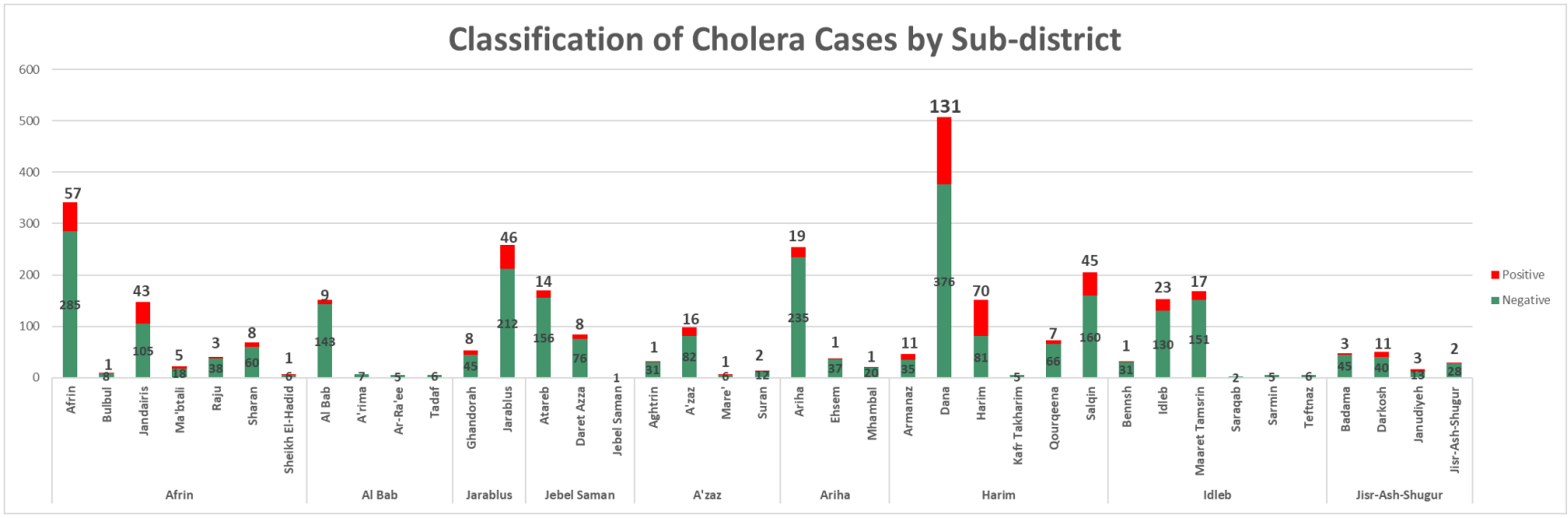
- In Epi week 06- 2023, the total number of stool specimens or rectal swabs is 67, of which 1 has tested positive for Vibrio Cholera.
- A cumulative of 3339 samples were collected since the start of the outbreak (7 % of overall line listed cases), of which 567 have tested positive by stool culture. The total positivity rate in NWS is 17 %. But the positivity rate in epi week 6 – 2023 was 1.5 %.
- The Total number of negative cases by stool culture is 2766, and the remaining 6 are still pending.
- During epi week 6, the EWARN lab conducted RDTs for 38 cases, all of them were negative for Cholera.

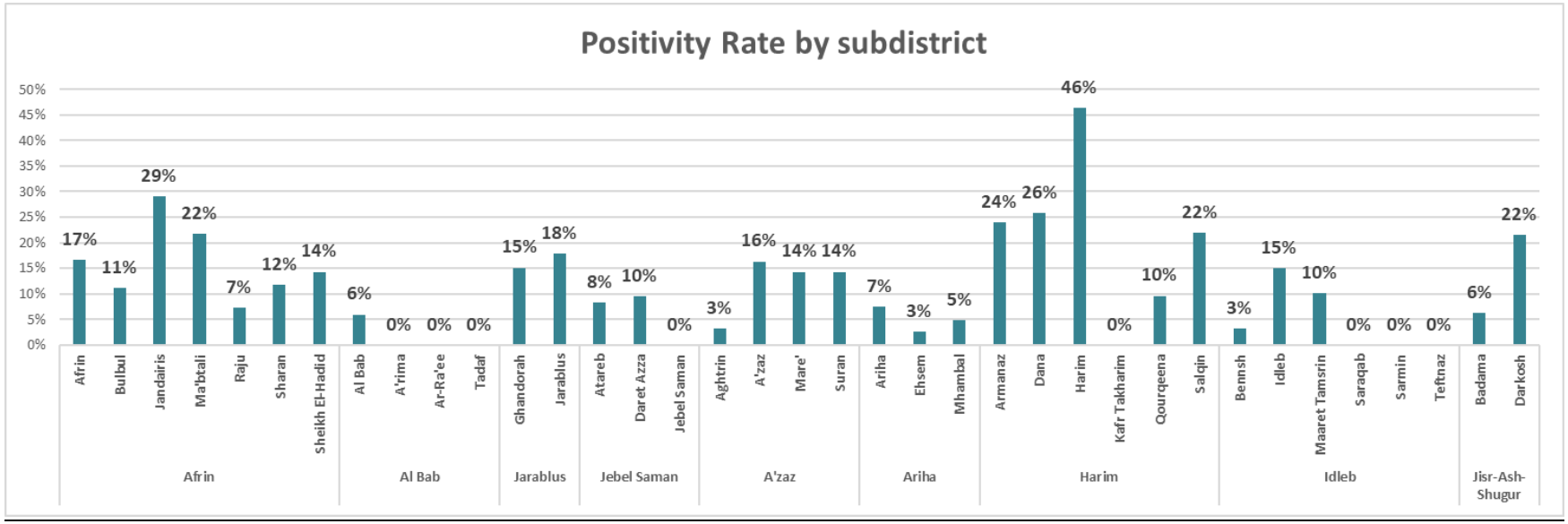


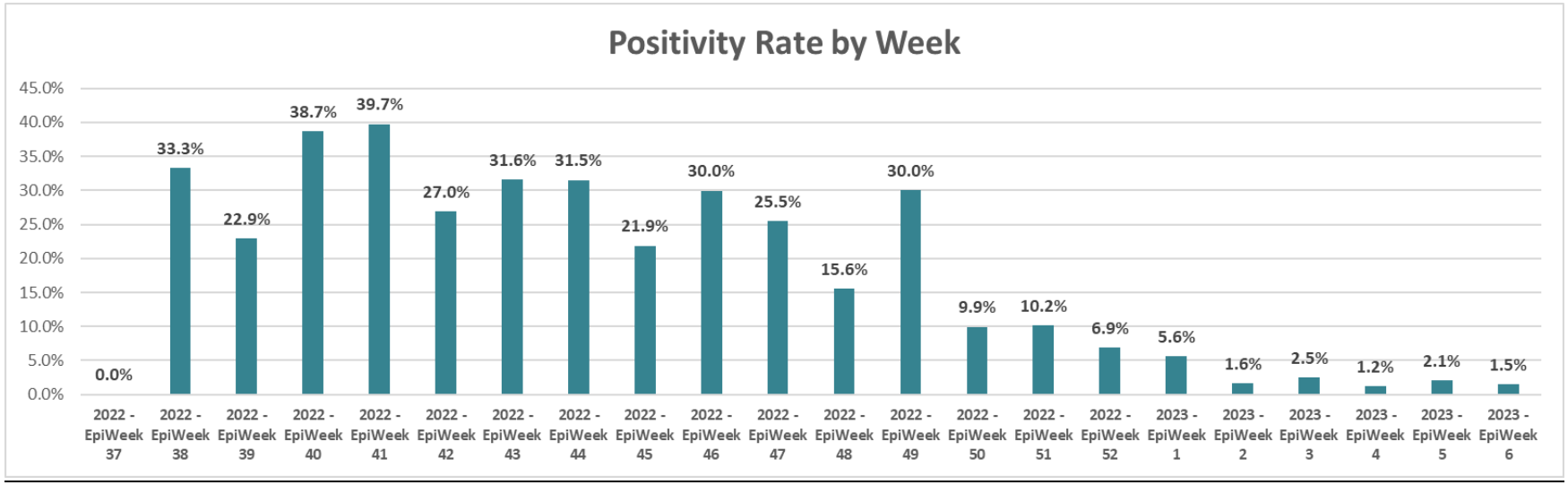




- Isolation and identification of V. cholera serogroup O1 or O139 by a culture of a stool specimen remain the gold standard for laboratory diagnosis.
- Currently, at EWARN laboratories (Idleb, Afrin, Jarablus, Raqqa, and Tal-Abiad) Fecal specimens are subcultured onto selective and nonselective media, including Nutrient agar and TCBS agar, for detection of V. cholera O1.
- Suspicious, oxidase-positive isolates are serotyped in polyvalent antisera raised against the O1 Antigen.
- Antimicrobial-sensitivity testing is performed to detect resistance.
- The culture sensitivity results came sensitive for the following antibiotics: Azithromycin, Imipenem, Chloramphenicol, Ciprofloxacin, and Norfloxacin.
- The resistance is to Tetracycline, Doxycycline, and Sulfamethoxazole Trimethoprim.
- The laboratory team handles the specimens and waste management according to infection control standards.
- The sample collection protocol is to collect stool samples in 7% of the total suspected cholera cases per subdistrict and 5 samples from the admitted cholera suspected cases in the CTC /CTU per week.

| pi Week | Governorate | District | Samples Collected on current week | Stool Culture Positive | Stool Culture Negative | Positivity Rate |
|---|---|---|---|---|---|---|
| Up to W06 - 2023 | Idleb | Ariha | 7 | 21 | 290 | 7% |
| | | Harim | 25 | 264 | 723 | 27% |
| | | Idleb | 4 | 40 | 325 | 11% |
| | | Jisr-Ash-Shugur | 7 | 19 | 126 | 13% |
| | Aleppo | Al Bab | 0 | 9 | 161 | 5% |
| | | Jarablus | 10 | 54 | 257 | 17% |
| | | Jebel Saman | 6 | 22 | 233 | 9% |
| | | A'zaz | 0 | 20 | 131 | 13% |
| | | Afrin | 8 | 118 | 520 | 18% |
| | Total | | 67 | 567 | 2766 | 17% |




Positivity Rate by subdistrict
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
17%
11%
29%
22%
7%
12%
14%
6%
0%
0%
0%
15%
18%
8%
10%
0%
3%
16%
14%
14%
7%
3%
5%
24%
26%
46%
0%
10%
22%
3%
15%
10%
0%
0%
0%
6%
22%
Afrin
Bulbul
Jandairis
Ma'btali
Raju
Sharan
Sheikh El-Hadid
Al Bab
A'rima
Ar-Ra'ee
Tadaf
Ghandorah
Jarablus
Atareb
Daret Azza
Jebel Saman
Aghtrin
A'zaz
Mare'
Suran
Ariha
Ehsem
Mhambal
Armanaz
Dana
Harim
Kafr Takharim
Qourqeena
Salqin
Bennsh
Idleb
Maaret Tamsrin
Saraqab
Sarmin
Teftnaz
Badama
Darkosh
Afrin
Al Bab
Jarablus
Jebel Saman
A'zaz
Ariha
Harim
Idleb
Jisr-Ash-Shugur


Positivity Rate by Week
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
0.0%
33.3%
22.9%
38.7%
39.7%
27.0%
31.6%
31.5%
21.9%
30.0%
25.5%
15.6%
30.0%
9.9%
10.2%
6.9%
5.6%
1.6%
2.5%
1.2%
2.1%
1.5%
2022 - EpiWeek 37
2022 - EpiWeek 38
2022 - EpiWeek 39
2022 - EpiWeek 40
2022 - EpiWeek 41
2022 - EpiWeek 42
2022 - EpiWeek 43
2022 - EpiWeek 44
2022 - EpiWeek 45
2022 - EpiWeek 46
2022 - EpiWeek 47
2022 - EpiWeek 48
2022 - EpiWeek 49
2022 - EpiWeek 50
2022 - EpiWeek 51
2022 - EpiWeek 52
2023 - EpiWeek 1
2023 - EpiWeek 2
2023 - EpiWeek 3
2023 - EpiWeek 4
2023 - EpiWeek 5
2023 - EpiWeek 6

## 2. WASH:

Due to a devastating earthquake that hits southern of Turkey and northern Syria, the field team couldn't conduct any investigation, since the focus was on rescuing work and responding to the needs of affected populations.

The acting organizations on the ground have communicated with us to deliver samples of water resources and conduct tests to ensure the safety of drinking water.

### Actions taken

- The EWARN team is currently conducting active surveillance in the most important health facilities in northwest Syria (25 HFs). In Epi week 6- 2023, 6 field visits were completed. During the visit, the team reviews with the health facility staff the records to ensure the reported cases, also discusses the challenges, and recommendations, and collaborates to treat the problems.
- ACU, meanwhile, the field team started evaluation of the water resources (water stations) to evaluate the damage, where more than 24 stations were evaluated.
- The EWARN team is currently training the CTC/CTUs staff in RDTs and sharing data in the line list.
- To determine the causes of acute watery diarrhea in children under 5 years (the children have a negative cholera result), the EWARN lab is planning to provide rotavirus and adenovirus rapid diagnostic tests (RDTs).
- The response teams conducted an expanded investigation of the deaths that occurred since the beginning of the outbreak (20 deaths), where some possible causes were identified, and the teams made appropriate recommendations.
- Strengthening surveillance to collect cases from all HFs.
- ACU teams conduct regular awareness sessions about Cholera, prevention, and control measures for local authorities and affected people during the investigation. Besides, the result of investigations is shared with the WASH cluster and acting organization in the area to take immediate action.

## Challenges

- Due to the devastating earthquake in northern Syria, there was a significant decrease in the number of reported cholera cases and collected samples, because a large number of health centers went out of service and others were responding to earthquake victims.
- Continuing movements of population.