

Epidemiological Overview

Between 25 August and 8 April, 111 084 suspected cholera cases have been reported from all 14 governorates, including 104 associated deaths to date at a case fatality rate of 0.09%. Since the last SITREP 15 was issued, 5 125 new suspected cases were reported of which 12 new cases were confirmed by culture, and three by rapid diagnostic tests (RDTs) during this period. There were no new deaths reported.

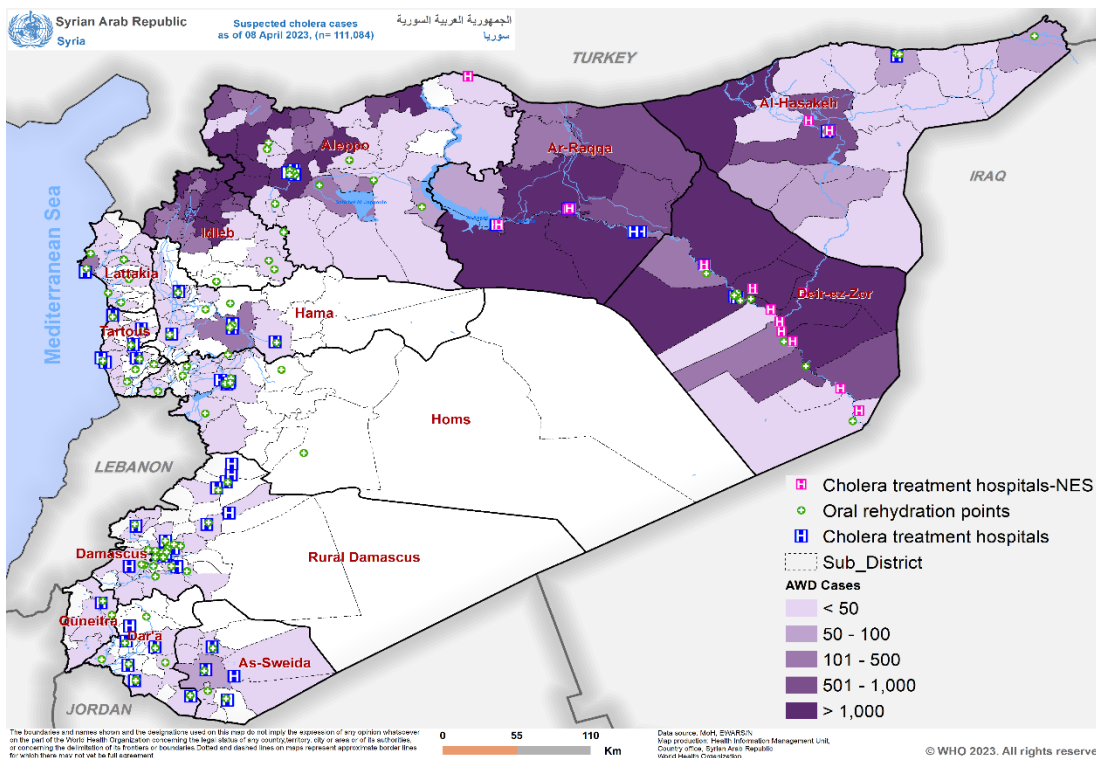
The most affected governorates to date are Idlib (36,543 cases, 32.9%), Aleppo (29,159 cases, 26.2%), Deir Ez-Zor (20,673 cases, 18.6%), and Ar-Raqqa (19,823 cases, 17.8%).

A total of 5 103 samples were tested by RDTs, with 1 919 of them testing positive, in addition to 972 samples tested positive by culture. The overall proportion of RDT-positive cases is 37.6%.

The earthquake (EQ) has heightened the risk of waterborne diseases, such as cholera, due to overcrowding in emergency shelters, extensive damage to water and sanitation infrastructure, and damage and disruption to cholera treatment infrastructure. Although the number of displaced people in emergency shelters has been declining during March and April of 2023, health and WASH partners remain vigilant.

- Suspected Cases**
111,084
- RDTs Positive Cases**
1,919
- Culture Positive Cases**
972
- Cholera Sus. Deaths**
104
- Case Fatality (CFR)**
0.09%
- Overall Attack Rate**
0.52%
- Affected Governorates**
14
- Grade**
2

Figure 1: Distribution of suspected cholera cases by date of onset as of April 8th, 2023



Epidemiological Data

Table 1 provides a breakdown of reported suspected cholera cases and deaths, as well as the number and type of tests performed in Syria’s governorates.

Table 1: Epidemiological data, as of April 8th, 2023

Governorate	Suspected Cases (AWD)	Population	Attack Rate (%)	RDTs	Positive RDTs	Culture + Tests	Attributed Deaths*	CFR%
Aleppo	29,159	4,170,826	0.70	2,127	1,034	271	49	0.2%
Al-Hasakeh	4,144	1,160,335	0.36	632	115	23	4	0.1%
Ar-Raqqa	19,823	767,956	2.58	352	74	101	10	0.1%
As-Sweida	81	380,118	0.02	81	26	2	0	0.0%
Damascus	43	1,829,796	0.00	40	20	10	1	0.0%
Dar'a	22	1,037,690	0.00	22	5	0	0	0.0%
Deir Ez-Zor	20,673	779,283	2.65	736	419	100	24	0.1%
Hama	195	1,344,853	0.01	188	52	55	1	0.5%
Homs	60	1,520,283	0.00	59	31	25	1	0.0%
Idleb	36,543	2,826,874	1.29	550	14	348	14	0.0%
Lattakia	184	1,274,118	0.01	161	98	31	0	0.0%
Quneitra	17	113,254	0.02	17	4	1	0	0.0%
Rural Damascus	112	3,032,345	0.00	111	17	3	0	0.0%
Tartous	28	943,399	0.00	27	10	2	0	0.0%
Total	111,084	21,181,130	0.52	5,103	1,919	972	104	0.09%

*Changes in attributed deaths across governorates reflects reclassification of patients according to their community.

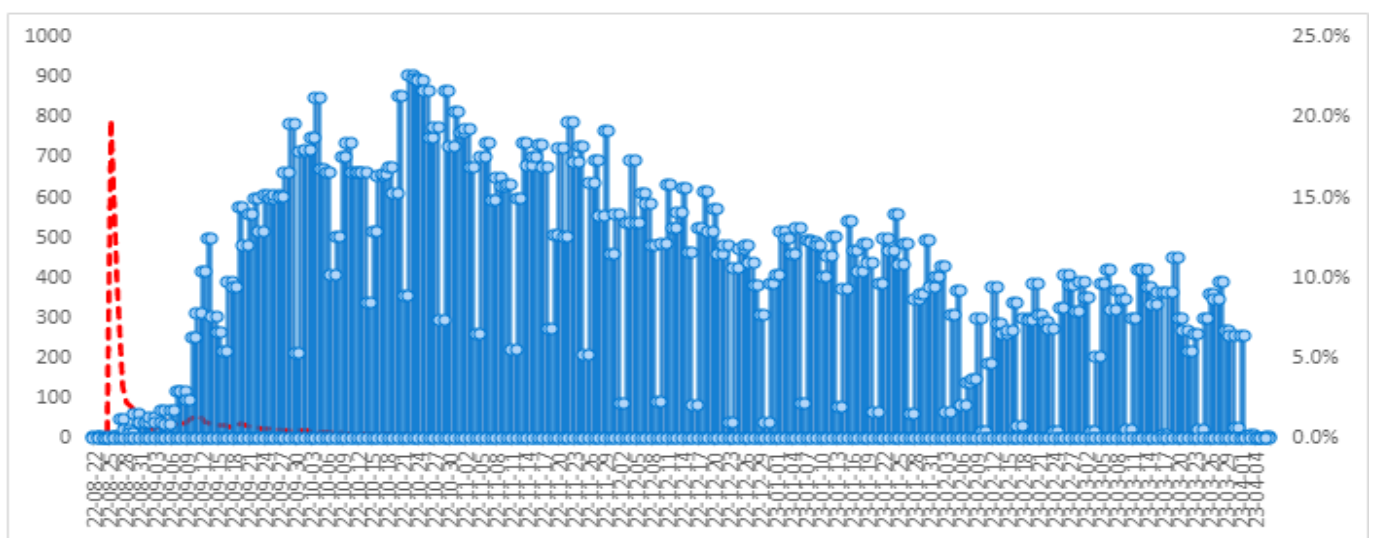


Figure 2: Distribution of suspected cholera cases by date of onset, as of April 8th, 2023

Overview of Cholera Surveillance and Testing Across Syria

Cholera case definition: both hubs use the standard case definition. Strict adherence remains critical.

Reporting: Within areas covered by the Ministry of Health (MoH) and electronic early warning, alert, and response system in emergencies (EWARS) surveillance, most suspected cholera cases were reported from hospitals' CTUs (severe cases). In contrast, within areas covered by electronic early warning, alert, and response network (EWARN) surveillance, reporting of moderate-to-severe suspect cholera cases comes from Primary Health Care Centers (PHCCs), Cholera Treatment Centers/Treatment Units (CTC/CTUs), and hospitals. Neither hub is capturing the mild cases in the community.

Testing strategy:

- In Northwest Syria (NWS) since the start of the outbreak, 3,822 samples were collected (7% of overall line listed cases), of which 578 tested positive by laboratory stool culture; 3,210 tested negative and 34 are pending. The total positivity rate in NWS is 15.3 %. In epidemiological Week 5 of 2023, the testing strategy was scaled up to include the use of rapid diagnostic tests (RDTs). In line with guidance from the Global Task Force on Cholera Control (GTFCC), 3 samples per day per health facility are tested by RDT and among positive RDTs, 3 are cultured per week.
- According to the MoH testing strategy, every suspected case is tested by RDT, and every 20th RDT positive sample is tested by culture. Further, for every 30 culture-positive cases, 10 samples undergo antibiogram testing. Since the start of the outbreak, 4,201 cases were tested by RDT of which 1847 were positive. Of these, 164 samples were cultured, of which 49 were found positive for cholera. In light of reduced cases, WHO has recommended that all suspected cases are tested by RDT and culture.

Acute Watery Diarrhea in Children Under 5 (U5): Recently, within EWARN surveillance areas, adeno, and rotavirus rapid testing has been introduced for analyzing acute watery diarrhea cases in children U5 who currently make up 44.6% of confirmed cholera cases in NWS. 87 samples were collected for rotavirus and 37 samples were found positive (42.5%). All 43 collected samples tested for Adenovirus were negative (100%).

Trends analysis: As differences in data collection and testing strategies have persisted throughout the cholera outbreak, overall analysis of disease trends is not affected.

Key Messages: WHO notes that despite declines in cases, **the cholera outbreak is still ongoing, and, with summer months looming, ensuring preparedness and response capacity is critical.** Additionally, since syndromic surveillance is utilized, **strict implementation of and adherence to the standard case definition is key:** consistency will provide a clear picture of disease trends and enable accurate comparison across to compare governorates, districts, and subdistricts.

Cholera Outbreak Response

Leadership and Coordination

- Joint WoS health and WASH coordination continues at the Whole of Syria (WoS) level and also across different response areas. WHO, UNICEF and OCHA are working together to ensure leadership of the different response pillars.
- Following the earthquake, cholera forecasting was revised to reflect an elevated 2% attack rate in earthquake-affected areas, while other areas remained unchanged.

Surveillance and Laboratory

- Active case search and operational updates continue by WHO Syria.
- To prepare for the summer months, WHO Syria conducted reorientation sessions for the EWARS assistants on acute watery diarrhea (AWD) reporting.
- To support capacity at the Ministry of Health (MOH) Central Public Health Laboratory, WHO Syria has delivered consumables to support 3000 culture tests, as well as antibiotic discs for sensitivity tests for approximately 2000 tests.
- Furthermore, following WHO Syria's previous support for the Deir Ez-Zor lab with essential equipment earlier this year, 25 technicians will receive on-job training to ensure the lab's full activation.
- Together with HLG Health Clusters partners, WHO Field Office in Gaziantep (GZT) has restored surveillance at sentinel sites in EQ-affected areas to more than 99% (225 out of 227 sites are now active).

Case Management

- WHO Syria continues its coordination efforts with MOH central team to expedite cholera treatment centers/cholera treatment units (CTCs/CTUs) rapid assessment using a WHO Tool has commenced in Hama. A one-day orientation training on the Rapid Assessment Tool for CTCs/CTUs based on WHO standard guidance. The training was attended by 30 MoH teams covering 53 CTCs/CTUs at the national and sub-national levels, including governorates affected by EQ. WHO personnel also participated in the training.
- Health partners in NWS continue to support the case management and referrals. Additional information on case management and referrals can be found in the cholera dashboard [Microsoft Power BI](#).
- WHO GZT and partners have launched a new infection prevention and control (IPC) project to train more frontline staff, as well as psychosocial workers (PSWs). The trained PSWs will remain at CTCs/CTUs to support patients and families and guide them on the next step in their treatment plan, as well as assist patients with mental health conditions.

Oral Cholera Vaccine (OCV)

In coordination with the Ministry of Health, a new OCV plan for the hotspot areas in Syria has been developed in anticipation of the cases expected in peak months considering normal seasonal trends, combined with the decline in single-dose immunity acquired during the OCV campaign conducted in December in high-risk areas of Aleppo, Ar-Raqqa, Al-Hasakeh and Deir Ez-Zor.

Water Sanitation and Hygiene (WASH)

WASH Rapid Response

- In collaboration with health partners, NWS completed Rapid Response Team (RRT) training (including cholera-related activities and a cholera case referral system) in the reception centers. In addition, Community Outbreak Response Teams (CORTs) have been activated in some cholera-affected areas.
- NWS partners are utilizing the case-area targeted intervention (CATI) approach to respond to cases, most significantly in Al Bab Sub-District where cases have recently increased sharply.
- In order to respond to alerts from WASH hotspots, WASH teams in NWS continue to collect samples from drinking water sources¹ like main stations, wells, water trucks, and taps; investigate septic tanks, sewage networks, and other sanitation services; review and catalog hygienic procedures; and investigate the agricultural market (sources of irrigation of agricultural products if applicable).
- Only one WASH partner in NES is still responding to cholera with kit distribution, which will end on April 30th, 2023 as no contingency stocks are being procured due to lack of fund.
- Through a partnership with UNICEF, Syrian Arab Red Crescent (SARC) teams are ready for deployment in case of new outbreaks and will utilize a case cluster approach.
- WHO Syria is developing a WASH retroactive dashboard based upon combined data from water quality monitoring, risk communication and community engagement interventions, and WASH-sector interventions. The dashboard aims to show hot spots of identified contaminated water sources and match them with correlated prevention and response interventions

Access to Safe Water

Safe water and NFI provision

- Water provision support from HCT WASH partners to the water establishment is on-going.
- Water trucking continues to be provided by partners to rural communities in northern and eastern rural Deir Ez-Zor, Rural Damascus, Al-Hasakeh City, and IDP camps.
- NWS WASH partners continue to invest in dosing pumps, chlorine, and training on the use and monitoring of free residual chlorine (FRC) in public water stations and trucked water.
- The EQ-affected areas were prioritized by NWS health and WASH partners for distribution of hygiene kits, WASH cholera kits, soap, and IEC materials.
- In NWS, Health and WASH clusters exchange daily case rates to facilitate the CATI approach.

Water Quality Monitoring

- In coordination with the Ministry of Water Resources (MoWR), WHO supports water quality monitoring activities in Aleppo, Lattakia, Tartous, and Homs/Hama.
- WHO Syria-supported water quality monitoring teams visited 6 shelters in Aleppo and collected 40 samples of which 3 (7.5%) presented bacterial contamination.
- In Aleppo city, contamination was detected in 56 of 170 collected samples (32.9%). In response, 1670 water purification tablets were distributed in host communities.

¹ Please see section *Access to Safe Water – Water Quality Monitoring* for more details.

- In Hama, 41 water samples were collected and analyzed from water sources in Hama city, rural areas and 3 shelters, of which just 1 sample (2.4%) was contaminated. Water samples were mainly collected from water reservoirs and taps.
- Across Idleb and northern Aleppo, 421 camps were monitored with 24% of locations showing no FRC. In the same area, 390 communities were monitored and no FRC was found in 72% of locations.
- Moreover, the WASH cluster field facilitators assessed the EQ reception centers (RCs) in NWS. In total, 109 RCs hosting 74,480 internally displaced persons (IDPs) were assessed, and the following are the key findings:
 - 7 RCs hosting 3,280 IDPs need urgent water delivery;
 - 32 RCs hosting 24,887 IDPs need urgent emergency latrines;
 - 59 RCs hosting 38,823 IDPs need hygiene items and promotions;
 - 26 RCs hosting 14,637 IDPs require solid waste management; and
 - 9 RCs hosting 3,855 IDPs have no declared WASH actor.

Sanitation

- The sanitation network is in major need of reconstruction/rehabilitation and is the leading cause of continued outbreaks of waterborne illness – including AWD and cholera cases. Rehabilitation/repair is currently planned in order to address a small percentage of the need. The procurement phase has been initiated, in conjunction with the earthquake response. However, these works have not been forthcoming through cholera funding mechanisms and the needs far outstrip the available resources.

Risk Communication and Community Engagement (RCCE)

- RCCE Technical Working Group (WG) in Syria was briefed on the epidemiological situation; the importance of continued efforts regarding community awareness was highlighted.
- WHO facilitated the training of 30 community health workers from the Syrian Arab Red Crescent (SARC) in their role in the prevention and response to cholera. Methods and approaches for relaying preventive messages, as well as types of messages, were discussed.
- WHO has been scaling up its RCCE efforts in EQ-affected areas. During the first half of April 2023, WHO conducted 4 trainings for 135 community health responders Aleppo and Latakia. Continued roll out of integrated community health training for health outreach teams is planned, including health information and education on cholera risks.
- 11 RCCE partners continue to report various activities in 27 sub-districts in NWS through 837 community health workers (CHWs), social mobilizers, and other mobile teams focusing on different modalities including face-to-face to raise awareness on cholera and other communicable diseases prioritizing the people affected by earthquake.
- In NWS, RCCE activities reached a total of 155,027 people, referring 698 suspected cases and another 3,611 cases of reproductive health (RH), child health, and nutrition to the needed health facilities and services in the target communities.

Logistics, Equipment, and Supplies

- Cholera supplies continue to flow from WHO Syria and WHO GZT to their respective operational areas. This includes lab kits, treatment kits, and RDTs.

Challenges / Gaps

(a) In EQ-affected areas

- The earthquake had a devastating impact on overall cholera response operations. In affected areas, water networks have been disrupted, displaced populations live in overcrowded conditions with poor WASH services thereby increasing the overall risk of disease outbreaks.
- There is heightened risk of spread of water and food-borne diseases due to disturbed water supplies, including exacerbation of ongoing cholera and hepatitis A.
- Across EQ-affected areas, emergency shelters pose the greatest risk to outbreak and spread of cholera, with WASH facilities insufficient for population.
- WASH and health actors struggle to adapt their operations to these rapid changes and the level of uncertainty regarding official plans and decisions. Local authorities are focused on evacuation of temporary shelters and relocating displaced persons to medium and long term shelter solutions and/or encouraging them to return home if the buildings are safe, often with little notice.
- Women, girls, and boys face protection risks in WASH facilities that lack locks, lights, and gender segregation in emergency shelters.

(b) Across Syria

- There is an urgent need to scale up preparedness measures across Syria ahead of the coming summer months at a time when dedicated cholera resources are declining and the population, as well as health and WASH authorities, are also challenged to respond competing emergency demands.
- The water crisis in northern Syria, including the disruption of the Alouk water station (for over 8 months) and extremely low water levels on the Euphrates River and its linked dams, will continue to pose a significant risk of increasing AWD, including cholera.
- In NWS, populations are experiencing reduced access to water via existing network due to the lack of support to operational costs and funds needed for light and medium rehabilitation.
- Sanitation is a main challenge and gap: the lack of proper wastewater management systems pose a high risk of water contamination especially considering that the wastewater and drainage waters are being used for irrigation purposes at community level.

Key Priorities

- Urgent advocacy for funding to support the implementation of the cholera response plan, particularly given the EQ's devastating impact.
- Advocacy on preparedness and alert activities with MoH and MoWR.
- Intensify behavior change RCCE actions, particularly community healthcare workers' orientations on cholera preparedness and prevention messages.

- Conduct knowledge attitudes and perceptions (KAP) studies in the response areas to monitor any potential change in community beliefs and concerns which may require adaption of current RCCE strategies.
- Ensure inter-cluster coordination for cholera response as part of the earthquake response.
- Increase chlorination and FRC control/investigation at community level.
- Organize a 2nd cholera training with a focus on the CATI-CORT approach for RRTs (CORT Teams on the field).
- Increase wastewater management at community level to avoid water contamination within water used for irrigation.
- Advocate for expansion of sewer networking and sanitation solutions at camps and community levels.
- Advocate for a political solution to the Alouk Water Pumping station.

Funding

- An estimated total of USD 55,490,944 million is required under the Whole of Syria AWD/Cholera Response Plan for the coming six months (Jan – June 2023).

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