



Cholera

in Deir Ezzor

An Eminent Epidemic

Summary Report on the Cholera Epidemic in
Deir Ezzor in the area under the Autonomous
Administration control

October 2022



Introduction

Thousands of Deir Ezzor residents in the Autonomous Administration areas were infected with cholera, which began to spread at the beginning of September 2022, according to confirmations from medical sources affiliated with the Autonomous Administration. People with acute diarrhea and vomiting symptoms flocked to hospitals in the region to run medical tests where they were diagnosed with cholera. Cases began to rise on a daily basis across various areas, and many patients died. As of 1 October 2022, the Autonomous Administration announced (4,988) cases and the death of (14) patients^[1] in Deir Ezzor only.

The United Nations Resident and Humanitarian Coordinator in Syria said in a statement^[2] on 12 September 2022, there were reports of hundreds of suspected cholera cases in Syria, including (201) cases in Deir Ezzor governorate. In his statement, he warned that the disease represents a "serious threat to people in Syria and the region" and added: "We urge all parties concerned to ensure sustainable and unhindered access to affected communities^[3]".

According to the director of "Al-Kasra" water pumping station, the water contamination of the Euphrates River is behind the cholera outbreak. He added: "The river was polluted because it has been turned into a landfill and an estuary for wastewater, and what made the problem even more complicated is the river's decreasing water levels. Many areas do not get drinking water from the water pumping stations. Therefore, people in those areas rely on water tankers that collect the water directly from the river without any sterilization process".

According to a nurse at Al-Kasra Hospital: "The hospital has raised the staff readiness since the beginning of the epidemic. The city hospital in "Al-Maamel" area has been chosen to receive critical cases because it is more equipped than the rest of the hospitals. Prior to the cholera outbreak, many local organizations warned about the risks that not all houses in Deir Ezzor have access to sterilized water^[4] and that they rely on river water directly. Also, the local organizations urged local authorities and civil organizations to intervene to limit the spread of diseases caused by contaminated water.

This report covers the causes of the cholera outbreak in the areas controlled by the Autonomous Administration in Deir Ezzor Governorate and the interventions that were provided to control the epidemic outbreak. The report lists several recommendations to avoid the return of the epidemic to the region in the future.

^[1] The figures were addressed in statement No. (1858) issued by the Health Committee for North and East Syria, that was reviewed by JFL.

^[2] United Nations Resident and Humanitarian Coordinator in Syria, Imran Riza, statement on the outbreak of cholera in Syria. <https://bit.ly/3MzVAgm>

^[3] The statement did not indicate whether these figures are based on figures from the Syrian Ministry of Health or other sources. However, the figures from the Ministry of Health in the government-controlled city of Deir Ezzor do not match the number of cases received by the city's hospitals, according to JFL researcher in Deir Ezzor city, which puts the ministry's statistics in doubt. Also, it is unclear whether there was contact between the coordinator and the Autonomous Administration, as the Administration areas in Deir Ezzor are witnessing hundreds of cases and many deaths.

^[4] Water Crisis in Deir Ezzor: Serious Repercussions for Local Residents, JFL, September 12 2022 <https://bit.ly/3TiEghW>

Causes of the Cholera Outbreak in Deir Ezzor

Doctors, water pumping stations' workers, and officials in the Autonomous Administration attribute the cause of the cholera outbreak to the contamination of drinking water in the governorate. According to Dr. Uday Fawzi Al-Hammadi from the "Al-Busaira" area, who was interviewed by the JFL researcher, the main reason for cholera is the water that turned into an incubator for bacteria after the accumulation of waste, sewage, and the decrease of water level. The director of the public hospital in Hajin area told the JFL researcher: "Fuel smuggling crossings play a major role in polluting the Euphrates River waters".

According to a medical source at Al-Kasra Hospital, the cause of death among cholera cases is delayed hospitalization. The source confirmed to the JFL researcher that those patients did not respond to late medical intervention, which led to their death.

In the first week of September 2022, the hospital of Al-Kasra in the western countryside of Deir Ezzor reported receiving dozens of cases with symptoms of acute diarrhea and vomiting suspected of having cholera. According to JFL researcher, on 11 and 12 September, the hospital witnessed chaos due to the increase in the number of suspected cases, besides the hospital's inability to accommodate many patients simultaneously. That forced the hospital administration to use the ambulance department to accommodate cholera cases. According to the medical staff, the pressure resulting from incoming cases for two days was due to the spread of fear among populations.

The number of cases in the eastern countryside remained lower than the number of cases and suspected cases in the western countryside. According to JFL researcher, water pumping stations in the eastern countryside provide water to vast areas. Many houses lacking water access from the stations get water from tankers that tap into the water from the stations, meaning that the water delivered to houses is pre-sterilized.

There have been many cholera cases in "Al-Busaira" area and "Jadeed Bakkarah"[5] town since the beginning of the outbreak. However, there were fewer cases in the eastern countryside compared to the western countryside, which is likely the outbreak's source, according to JFL's follow-up on the spread of cases. That prompted the Administration's health authorities to open additional health centers to receive new cases. The director of Al-Busayrah Hospital told JFL researcher that the hospital "is equipped to accommodate (50) cases at a time. Still, sometimes the hospital faced a shortage in medicine, especially inflammatory".

[5] The two districts, villages, and towns nearby are called the "center region" according to the administrative division of the Autonomous Administration.

The Work of Water Pumping Stations in Deir Ezzor before the Cholera Outbreak

Hamoud Al-Ali, the head of water pumping stations in the "center region" of the Autonomous Administration, said that chlorine is available and is distributed densely to all water pumping stations in Deir Ezzor. "Some stations have sterilization laboratories to control the percentage of chlorine in the water such as the "Al-Busaira" station. There are efforts to provide all water pumping stations with sterilization laboratories", he added.

The director of "Al-Busaira" water pumping station said: "The station has been regularly supplied with chlorine for four years by the Autonomous Administration's Public Establishment for Drinking Water".

According to the head of water pumping stations, Concern Worldwide organization has been the major provider of chlorine powder to water pumping stations for years.



The sterilization by distillation location in Al-Busaira Water Pumping Station – Exclusive to JFL, 10 October 2022.

An official at the Public Establishment for Drinking Water in Deir Ezzor explained to JFL the stages of the sterilization process: "The sterilization process goes through stages ranging from (3) to (5) depending on each station. There are small tanks filled with chlorine and others with alum, and the water passes through those tanks until it reaches the percentage of sterilization that makes it drinkable. Water is tested after sterilization to ensure that it has reached the required sterilization rate".

The official added: "Work is underway to expand the water pumping stations to reach maximum possible capacity".

The director of the water pumping station in "Al-Kasra" town told the JFL researcher: "The station supplies water to a large area of villages and towns in Al-Kasra district, and it has several sterilization stages using chlorine and alum. Also, there is a project to expand the water network of the pumping station to new areas".



Al-Kasra Water Pumping Station – Exclusive to JFL, 10 October 2022.

The Role of Non-governmental Organizations in the Rehabilitation of Water Pumping Stations before the Cholera Outbreak

The organizations have a key role in the rehabilitation of water pumping stations in Deir Ezzor after 2017 when the Autonomous Administration allowed local and international civil society organizations to operate. However, their efforts did not include operation processes that are run by the Administration's authorities. The director of the local organization Insaf says: "Organizations have rehabilitated many pumping stations, including the maintenance of water transmission pipelines. Yet, the organizations did not intervene in sterilization and filtration." An official at Sama's organization confirmed: "About a year ago, we rehabilitated Al-Busaira water pumping station. Our organization recently finished rehabilitating a water pumping station in Mashekh village. Currently, we are establishing a water pumping station in Hariza[6] village.

According to activists in the organizations interviewed by JFL, the completion of the current projects will spare locals from using water tankers.

[6] The villages of Mashekh and Hariza are part of Al-Busaira town in the central region.

Readiness of Some Hospitals in the Administration Control Areas before the Cholera Outbreak

Al-Kasra District in the Western Countryside

There are (4) hospitals in the district, (2) of them are public and (2) private. There are (6) dispensaries providing services besides rehabilitating the seventh dispensary in "Hawij Diab". There are (25) pharmacies and (8) private clinics in the western countryside.

Al-Kasra public Hospital has nurseries, echo machines, radiology, operating rooms, a dialysis department, and a physiotherapy department. The hospital is staffed with (3) doctors and (4) nurses. It mainly receives support from the organizations: Relief International, Medical Relief, Humanity & Inclusion and Sawsan in addition to the support provided by the Health Committee of the Autonomous Administration.

"Al-Madina" Public Hospital, which was established by the Health Committee of the Autonomous Administration, is considered a major center for the reception of cholera cases, containing a complex of clinics of many specialties, (8) rooms for receiving patients, a laboratory, and (50) beds. The hospital is mainly supported by Action for Humanity.

Al-Busaira District in the Northern Countryside

The district has (6) hospitals, including (3) public hospitals and (3) dispensaries. Also, there are (13) private clinics. Relief International and Humanity & Inclusion, and the Health Committee of the Autonomous Administration provide support to public hospitals and dispensaries with medicines and equipment, including nurseries, laboratory equipment, radiology equipment, operation room's equipment and physiotherapy departments.

Hajin District in the Eastern Countryside

There is one public hospital and (7) private hospitals and two dispensaries. Additionally, there are (9) private clinics. "Sawsan" organization and the organizations "Humanity & Inclusion", and "Action for Humanity" provide support to hospitals and public dispensaries to run the clinics, including gynecology and pediatrics, as well as the ambulance department, physiotherapy department, and laboratories. Some organizations try to increase their support to the hospital to provide more free medical services in the district.



Public Hospital in Hajin - Exclusive to JFL, 6 August 2022.

The Negative Role of Decreasing Water Levels of Euphrates River in the Emergence of a Cholera Epidemic

Many workers of water pumping stations and doctors at hospitals in Deir Ezzor attribute the emergence of the cholera epidemic to several reasons. One of them is the decline of water levels of the Euphrates River, which among other reasons, led to transform the river into an incubator for bacteria. A worker at the Euphrates Dam told the JFL researcher in Raqqa region that the decline in the river's water level dates back to the beginning of 2021 after the decline of the water flow coming from Turkey towards Syria: "Syria actually receives only half of its allocations of water resource according to the regional protocol between Syria and Turkey in 1987, which stipulates that Syria will receive (500) Cumecs (cubic meter per second) of water. In comparison, Syria now gets no more than (200) Cumecs[7]". The dam worker commented on the reason for the decline in water resources: "There are political reasons, as water is one of Turkey's political cards to put pressure on the Autonomous Administration. Additionally, there are natural reasons related to the recent drought wave that hit the region, besides other reasons related to Turkey's agricultural projects, especially the "GAP"[8] project that included the construction of (22) dams and (19) power plants".

According to the UN Resident and Humanitarian Coordinator in Syria, the cholera outbreak is "an indication of the acute water shortage across Syria. As the water levels of the Euphrates River continue to decline, the continuous drought-like conditions, and the damage volume to the water system infrastructure, many people at actual risk in Syria rely on unsafe water sources, which could lead to the outbreak of serious waterborne diseases, especially among children".

[7] Turkish Seizure on Euphrates River' Water, Aljumburiya, June 2021.

<https://bit.ly/3CXYdFr>

[8] Ibid

The decline of water flow reflected on water reserves in the Euphrates Dam Lake, which is an important water reservoir that contributes to the irrigation of large areas of agricultural lands in the governorates of Raqqa and Aleppo. Many irrigation canals are channeled from the river to irrigate thousands of hectares of agricultural lands. The dam worker said: "Many smaller irrigation canals come from the Balikh main irrigation canal, (130) km long and (20) m wide. However, the decline in water flow and a drought wave played a major role in the decline in the water level". He added: "Currently, there are no root solutions to compensate for the water shortage as it is not possible to stop the water flow into irrigation canals that feed agricultural lands and divert the water to the river basin. Still, it is possible to prolong the reduction of pumping into the Balikh water canal to two months instead of one, as it was common in previous years, to compensate for the shortage in water level of the river and thus clean the riverbed and its basin. The reduction period starts from the beginning of October 2022 and ends by the end of November 2022". The head of the Water Bureau in Deir Ezzor Civil Council told JFL researcher: "The Civil Council has informed the Euphrates Dam management to raise water levels of the Euphrates River to clear amassed waste and litter".

The Intervention after the Epidemic Outbreak

Since 2017, the Autonomous Administration and civil society organizations have been working on infrastructure rehabilitation, including water pumping stations that suffered severe damage from years of war. According to the water pumping station director in "Al-Kasra": "The prolonging war negatively affected the work of water pumping stations. Not all stations have been restored or provided sufficient expertise to operate and ensure their continuity". According to a logistics official in a local organization, local authorities bear a large part of the responsibility for the current situation: "The civil councils have failed to develop health and municipal services in various areas, which led to the cholera outbreak as well as confusion in dealing with hundreds of cases in hospitals".

The Deir Ezzor Civil Council distributed leaflets about cholera, its transmission, prevention methods, and treatment[9]. Additionally, many organizations held campaigns to spread awareness among people about the protection from cholera and how to deal with it in case of infection. The organizations used social media and brochures in their campaigns. The director of Auda Organization, Mr. Wadah Al-Ashish, said: "In cooperation with the local authorities, the organization carried out awareness campaigns targeting the employees of a water pumping station in "Al-Jirithi" town, a number of residents, and many teachers. The campaign focused on explaining how to use chlorine to sterilize drinking water at home, as well as conducting a test for drinking water at the station".

During the beginning of the cholera epidemic, the Autonomous Administration instructed water pumping stations across various areas of Deir Ezzor to distribute chlorine to the local population to avoid a rise in the number of cholera cases. According to the director of the water pumping station in "Al-Kasra" town: The station was supplied with large quantities of chlorine in order to be distributed to houses without access to water from the station.

[9] Deir Ezzor Media Center - September 28, 2022.
<https://bit.ly/3EFrXYU>



الإدارة الذاتية للحل والشرق سوريا
مجلس دير الزور المدني
هيئة الخدمات والتدعيم العامة
المؤسسة العامة لمياه الشرب

نداء

الى جميع اهالينا في دير الزور الذين لا تصلهم مياه عن طريق شبكات المياه والذين يستخدمون مياه الشرب عن طريق الصهاريج علما بانها غير معقمة وحرصا من المؤسسة العامة لمياه الشرب على سلامة الجميع يطلب منكم التوجه الى اقرب محطة في منطقتكم لتزويدكم بمادة الكلور

شاكرين تعاونكم

مدير المؤسسة العامة لمياه الشرب



An appeal issued by the Public Establishment for Drinking Water of the Civil Council of Deir Ezzor - 10 September 2022

Credit: Deir Ezzor Media Center Facebook Page

The Administration facilitated the distribution of necessary medicines to public hospitals in various areas, especially those with the highest rate of cases, such as villages and towns in the western countryside. A health facility was established "Al-S'awa" village in the western countryside and another facility in "Al-Zer" area in the eastern countryside to receive and treat cholera cases.

A doctor in Al-Busaira town said: "The hospitals of Al-Busaira and Jadeed Bakkarah have the equipment. But, they lacked enough quantities of medicines to deal with cholera at the beginning of the epidemic."

Mr. Hamoud Al-Ali, the head of water pumping stations in the "Center Region" of the Autonomous Administration, said: "The UNICEF has been continuously supporting us with large quantities of liquid chlorine. However, as new cholera cases are continuously reported, there is an increasing need more quantities of chlorine".

The head of the Water Bureau at the Deir Ezzor Civil Council said: "We sent a letter to the General Security Bureau to facilitate the entry of trucks loaded with chlorine coming from Raqqa governorate. All stations emptied their water depots, processed the water with chlorine, and refilled the depots. The Water Establishment tested the water to check the sterilization percentage". The Water Establishment started monitoring water tankers transporting drinking water to homes without access to the water from the pumping stations. Mr. Aziz Rashid Al-Salman, the official of water pumping stations in the eastern countryside, told JFL on September 20, 2022: "Many workers were appointed to sterilize the water at wells where tankers are tapping from. Although, we face some challenges in transporting chlorine from the main center in "Al-Maamel" area to water pumping stations in the eastern countryside".

According to an official at the Public Water Establishment in Deir Ezzor: "Chlorine has been supplied for four years on a regular basis. Sometimes there is some delay depending on the traffic at the crossings. After the cholera outbreak, the UNICEF and Concern Worldwide supplied several tons of chlorine that we distributed to water pumping stations".



Hajin Main Water Pumping Station - Exclusive to JFL, 9 October 2022.

Nevertheless, on 29 September, the Public Establishment for Drinking Water in Deir Ezzor announced that it was unable to carry out its regular duties due to the lack of adequate financial support. According to JFL researcher, the announcement came after the Public Financial Affairs Authority refused to disburse a budget allocated to restore the stations and purchase of machine grease and oil and spare parts. Some water pumping stations use diesel fuel to operate due to a lack of electricity.



*A copy of the Public Establishment for Drinking Water's announcement about its inability to carry out its duties
JFL researchers verified the declaration*

Conclusion

According to information obtained by JFL from the Autonomous Administration officials, doctors, water station workers, Euphrates Dam workers, and civil activists, the information concluded that:

The cholera outbreak was not surprising because all the factors of the epidemic outbreak were obvious, including the delivery of unsterilized water to dozens, or perhaps hundreds, of homes in the Administration areas, delivery delays of sterilization materials, the decline in water levels of the Euphrates River, and transforming the river into a landfill. Many organizations warned about the risks of spreading diseases because of water contamination, especially after the sharp decline in the Euphrates' water level.

The number of hospitals^[10] capable of dealing with emergencies is insufficient, besides the existing hospitals suffer from equipment inadequacy. That was clear when hundreds of cases rushed to hospitals at once. Some health care facilities like "Al-S'awa" center, which opened during the cholera outbreak, suffered a shortage of necessary medicines for several days, despite the influx of dozens of cases to the center. Several hospital staff mentioned that the hospitals were not equipped enough to deal with the cholera at the very beginning.

The Administration took clear actions by supplying more chlorine, speeding up the delivery of chlorine to water stations and instructing them to distribute the chlorine to the populations, supplying medicines to hospitals, opening new medical facilities, and monitoring the water transported by water tankers. The Administration's potential demonstrated in the cholera pandemic represents the possibilities available. However, since the hospitals reported a shortage of medicines and not enough health facilities and staff besides the Public Water Establishment's announcement of a financial shortage during the cholera outbreak, that may indicate that the Administration does not have sufficient planning to develop the health and the water sectors to meet the regional needs. As the Administration did not take any action and waited for the cholera outbreak to emerge, which raises fears that this response might stop when the outbreak becomes under control.

The decline in water levels of the Euphrates River means that there is a possibility of new water contamination which threatens with more crises in the future. According to workers at the Euphrates Dam, the water level decline will continue, and finding a long-term solution is extremely difficult. In addition, the use of the Euphrates waters as a political card to put pressure on conflicted parties and states involved in Syrian affairs without any consideration for civilians' lives.

All that means that the crisis can be repeated in the future if cholera's factors and reasons are not handled at the local and international levels.

[10] Deir Ezzor: Challenges of Health Sector in Autonomous Administration Areas, JFL, October 2022.
<https://bit.ly/3yFRvRI>

Recommendations

According to the interviews and the JFL findings, it is recommended that:

The Syrian Government

- To provide all kinds of support necessary to overcome the crisis of the cholera outbreak in all areas of Deir Ezzor governorate without discrimination. The Syrian government is in contact with the Autonomous Administration at the military and political levels. So, the government must provide all kinds of support to the Administration's areas.
- To hold communication with Turkey to obtaining Syria's full share of water, considering the recent communication announced by the governments of both

The Autonomous Administration

- To set a long-term plan for the development of the health sector, including the expansion of existing healthcare centers, especially in the center of towns, increasing the number of clinics in villages, increasing the number of beds and ambulances, and providing all medical facilities with the necessary medicines and equipment.
- To set a long-term plan to improve water quality by repairing water pumping stations and establishing new ones, providing all stations with the necessary sterilization equipment and materials regularly without interruption, and the plan should include access to sterilized water in all homes.
- Until the water improvement plan is prepared, the Autonomous Administration should continue to monitor the water tankers, which already started in some areas at the beginning of the cholera outbreak, and make sure that the water the population has access to is adequately sterilized.
- To ensure timely delivery of medical materials, sterilization materials, and everything necessary to improve water and health care. Moreover, to prioritize the delivery of those materials as a top priority to facilitate smooth delivery without any delay.
- The Autonomous Administration should adopt sustainable and serious action towards the decline in water levels of the Euphrates River. Furthermore, the Administration should benefit from the good relations with Russia and the United States to pressure Turkey to release Syria's full share of water.
- To facilitate the work of civil society organizations, especially everything related to healthcare and water.
- Developing the sewage system in various areas so that it does not remain the source of water contamination in the Euphrates River.

Civil Society Organizations, especially that Support Health, Water, and Sanitation Sectors

- To accelerate the implementation of projects that support hospitals and water pumping stations, and to increase the number of those projects.
- The organizations must participate in projects aiming to develop the sewage system, which is one of the main sources of water pollution in the Euphrates River.

Countries Involved in the Syrian Cause

- To facilitate indiscriminate delivery of medical aid and materials necessary for developing services to all Syrian areas and issue necessary resolutions at the United Nations' Security Council level or the neighboring countries of Syria level.
- To consider the cholera outbreak and its consequences, and the possibility of its reoccurrence in the future because the reasons for cholera still exist, when discussing resolutions related to provision of aid to Syria, especially related to healthcare.
- To consider the recommendations of the United Nations Resident and Humanitarian Coordinator in Syria on the severity of the cholera epidemic and the need to facilitate access to all affected communities within Syria.