

Devastating earthquakes in northwestern Syria in time of an ongoing cholera outbreak: a crisis on top of a crisis

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In light of the events of 6 February 2023, namely a devastating Mw=7,8 earthquake and a subsequent triggered event in southeastern Turkey and northwestern Syria¹, the international community has to reflect on serious public health issues that have loomed in Syria. These earthquakes, being described as two of the deadliest of the 21st century, seemed to exacerbate the existing cholera outbreak, creating a crisis on top of a crisis.

In August 2022, an increase in acute watery diarrhea cases were reported in Syria but it was not until 10th September 2022 that the Syrian government declared that the country was facing a significant outbreak of cholera, posing a severe public health threat.² Cholera is an infectious disease, caused by the bacteria *Vibrio*

cholerae, that spreads through contaminated water or food and can cause severe dehydration and diarrhea, leading to rapid health deterioration and, in severe cases, death.³ The disease can be treated, however, patients need prompt attention and specialized care. Unfortunately, the ongoing conflict in Syria (civil war since 2011) has severely weakened the country's healthcare system, making it highly improbable to contain and control the spread of cholera.

While Syria had been experiencing such a severe public health crisis, in early February two powerful earthquakes occurred. Dozens of towns have been reduced to rubble with buildings and infrastructure collapsing in a matter of seconds. Without any doubt, Syria was in no way prepared to face a natural disaster of such

proportions and local authorities declared a state of emergency. While the immediate focus was on search and rescue efforts and providing emergency aid to earthquake-affected regions, medical authorities worried about the risk of exacerbation of the cholera outbreak. The fears of the experts were more than justified given the historical example of the cholera outbreak in Haiti in 2010 that occurred 10 months after a catastrophic earthquake and was the worst in history, with over 820,000 cases and nearly 10,000 deaths.⁴ According to the last report of Early Warning and Epidemic Response Program (EWARN) in northwest Syria until mid-March 2023, cumulatively, a total of 57947 suspected cases including 578 confirmed have been reported.⁵ Last month, two individuals in northwestern Syria succumbed to cholera, and the total count of fatalities in the region due to cholera since the outbreak started last year increased to 22.⁶ The numbers of the current outbreak are not high, but they are not reassuring either, given that many patients may not have access to health services, and even after access may remain undiagnosed or underreported.

How is a natural disaster related to an outbreak or worsening of an already existing outbreak of cholera? First of all, earthquakes have seriously impacted the country's water and sanitation infrastructure in a composite manner observed after most other major earthquakes.⁷ Many of the country's water treatment facilities have been damaged or destroyed and basic sanitation facilities, such as latrines and hand washing stations, are in short supply. The lack of access to clean water and adequate sanitation has created ideal conditions for cholera to spread. Furthermore, earthquakes led to displacement of populations, with around 90.000 Syrians forced to leave their homes and live in overcrowded, emergency shelters and evacuation camps with limited access to safe water and sanitation facilities. The earthquakes, also, exacerbated existing challenges in the Syrian healthcare system. Hospitals and healthcare facilities were damaged, and medical supplies were limited. Medical personnel were already facing difficulties in managing the ongoing SARS-CoV-2 pandemic and other health challenges such as providing care for the war-wounded individuals, and the earthquake only added to their burden.

Hopeful seems to be the fact that international aid

organizations, namely the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), recently launched a vaccination campaign in earthquake-hit areas of northwest Syria.⁸ During this campaign, groups of health workers and community volunteers will help with the vaccination procedure, in order to build a wall of immunity.⁸ The campaign will involve administering 1.7 million doses of cholera vaccine.⁸ Oral Cholera Vaccines (OCVs) will be used, a fact that obviously helps accelerate the vaccination procedure. Three OCVs are currently prequalified by WHO and they are killed, whole-cell vaccines that provide sustained protection of over 60% for a minimum of 2 years, stimulate the immune system in a timely manner and are considered safe.⁹ All three vaccines require a two-dose regimen.

The recent earthquakes in Syria have highlighted the potential for public health emergencies in regions with inadequate infrastructure and resources. On the other hand, the aggravated outbreak of cholera underscores the need for long-term investment in solidly-built water and sanitation infrastructure and targeted public health interventions in order to prevent the spread of cholera such as disease surveillance and raising awareness among the public about cholera.¹⁰ Vaccinations may not be the panacea, but they are fundamental in getting to a post-outbreak normal. Long-term solution to the Syria cholera outbreak is only to ensure access to safe water and sanitation facilities. It should be noted that by 2030, the aim of eradicating cholera in high-risk regions has been set as an ambitious target by the Global Task Force for Cholera Control (GTFCC) and the WHO.¹¹ The latter should make a comprehensive approach that addresses the social, economic, and environmental factors that contribute to transmission of cholera.

In a nutshell, cholera is an ancient disease that continues to pose a public health challenge in many impoverished regions around the world. The international community should consider the magnitude of the existing problems in those regions and continue to support efforts to address the underlying health challenges. Individuals should thrive free from the threat of infectious diseases, especially if they can be prevented like cholera. In particular, earthquake-stricken Syrians should really prosper after years of civil war and humanitarian crisis.



Άρθρο Σύνταξης

Καταστροφικοί σεισμοί στη βορειοδυτική Συρία σε περίοδο συνεχιζόμενης επιδημίας χολέρας: μια κρίση μέσα στην κρίση

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