



# Responding to the COVID-19 Crisis in Syria

A Five Part Approach through 'Operation Breathe'



Ten years of conflict has devastated Syria's health system and displaced over 70% of health workers. Compounding the existing humanitarian crises is COVID-19. The true scope of the COVID-19 outbreak is unknown due to limited testing capacity, underreporting, lack of access to healthcare, and more. However, we know that across the country, the situation has been dire - hospitals in many areas have been completely overwhelmed, and local doctors describe being forced to turn COVID-19 patients away.

As part of our overall COVID-19 response, MedGlobal launched 'Operation Breathe' in August 2020 to address multiple aspects of the pandemic in Syria and reduce mortality. Operation Breathe is a model program that centers around health worker protection, meeting immediate and long-term needs, and providing multiple treatment options to increase accessibility of care. This program includes five key components: protecting health workers through provision of PPE, training doctors and nurses in clinical management of COVID-19 patients in emergency settings, building industrial oxygen generator stations to cover the oxygen needs of over 1 million people, building capacity of health facilities to treat COVID patients by providing the most critically needed supplies, and creating comprehensive at-home treatment options in areas where health facility care is inaccessible or unrealistic.

## **10 Years In: Ongoing Health Crises in Syria**

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The decade-long conflict in Syria has killed hundreds of thousands of people and created the world's largest displacement crisis. Destruction of health facilities, the displacement and death of health workers, and fractured health systems have exacerbated the humanitarian situation and severely crippled local and national capacities. Even before the pandemic, the broken health system in Syria was unable to cope with the scale of health emergencies, and particularly lacked the capacity to respond to outbreaks and epidemics, such as polio and cholera.

The protracted conflict has led to a fractured health system - with government-controlled areas, the northwest, and the northeast each having distinct governance systems and humanitarian responses. There are about 10 million people in government-controlled areas, 4.2 million in the northwest, and 2.7 million in the northeast - with an additional 5.6 million Syrian refugees, primarily in neighboring countries. Due to the decentralized nature of the health system, NGOs and local health directorates have stepped in to provide services and oversee health campaigns typically led by the national health system.

## COVID-19 in Syria

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The COVID-19 crisis hit Syria hard in 2020. The true scope of the outbreak is unknown - official tracking shows around 45,000 total cases across government-held areas, the northwest, and the northeast, but these official numbers are likely only a small percent of total cases. In August 2020, the deputy director of health estimated the real number of COVID-19 cases to be 112,500 in the Damascus area alone, which official data put the caseload at 1,593 for the whole country. Underreporting, limited testing capacity, a lack of access to healthcare, and misinformation and stigmas associated with the virus all contribute to the ongoing discrepancy in case data. Local health systems lack the capacity to effectively treat cases as 70% of health workers have fled the country and there is a dire lack of personal protective equipment, medical oxygen, ventilators, and other key equipment across the country.

In government-controlled areas, there were only 6 labs for COVID-19 testing. The number of daily tests has been around 570 daily, compared to 15,000-20,000 daily in neighboring Lebanon and Jordan, both of which have less than half the population of Syria. The positivity rate of tests in Syria has been more than 70%. Reports from government-controlled areas showed a startling reality in hospitals - many refused to admit patients because of a lack of capacity, and many people died in their homes from COVID-like symptoms. Many healthcare providers died from COVID-19, with local health workers tracking the deaths of their colleagues and reporting over 160 healthcare providers who died from COVID-19. Many of them were senior doctors. Health workers asked to purchase their own PPE, and many hospitals required patients to pay for their oxygen or even ventilators. Health facilities reported running out of body bags.



Northwest Syria has been particularly affected by the bombing and destruction of health facilities, as well as the lack of qualified health personnel. In the northwest, there are only 9 hospitals operationalized to treat COVID-19 patients among a population of over 4 million, half of whom are internally displaced persons (IDPs). There are only 212 ICU beds and 162 ventilators to cover the health needs of this population. Across all of northern Syria, the overarching humanitarian crises remain dire, with rising rates of malnutrition, densely populated camps that prevent social distancing, the effects of harsh winter months, and the destruction of water and sanitation systems.

*“My hospital in Chicago has more ventilators and ICU beds than the whole northwest region of Syria.”*

Dr. Zaher Sahloul  
MedGlobal President

The Syrian Ministry of Health is set to receive the first round of COVID-19 vaccines through COVAX, as well as Russian and Chinese vaccines, in April. However, it is unclear which areas will be included in the national vaccine plan, with particular concerns that vaccines may not reach the northeast. In the northwest, the Syria Immunization Group has also requested vaccines through COVAX, with plans to implement a separate cross-border response. Across the country, there are concerns about access issues, logistical constraints in vaccine delivery and storage, and growing misinformation and stigma associated with COVID-19 and the vaccine - all of which will make an effective vaccination campaign a difficult undertaking.

## Operation Breathe

In August 2020, as part of our overall COVID-19 response, MedGlobal launched 'Operation Breathe' in Syria to address multiple aspects of the pandemic and reduce mortality. Operation Breathe is a model program that centers around health worker protection, meeting short and long-term needs, and providing multiple treatment options to increase accessibility of care. In assessing needs for this setting, we worked to:

- Identify and quantify gaps in existing health services in various areas of Syria.
- Surge emergency supplies and equipment, to offer multiple treatment options and increase accessibility of critical healthcare as demand spiked.
- Ensure long-term access to healthcare through building infrastructure and training healthcare providers.



This program includes five key components:

### Protecting health workers.

A centerpoint of Operation Breathe and MedGlobal's work at large has been providing personal protective equipment (PPE) to healthcare providers. PPE is critical in protecting healthcare providers as they treat others, and allows them to mitigate risk. We provided over 58,000 PPE directly to healthcare providers in northwest Syria, as well as to health facilities and quarantine centers. According to the Idlib Health Directorate, there are only 1.4 physicians per 10,000 people in northwest Syria, compared to the world average of 16 per 10,000 people. The safety of each health worker is especially critical for the vulnerable communities they serve in this region.

### Training doctors, nurses, and health providers.

Training for medical professionals in clinical management of COVID-19 patients is critical across all settings, as health workers adapted to the unfamiliar context of the pandemic. Based on the local needs, MedGlobal launched a training on management of COVID-19 and its complications through the Syrian Board of Medical Specialties, a training on principles of disaster management (prepare, conserve, replace, re-use, reallocate), and a tele-health program to provide consultation to Syrian healthcare providers on specific cases.

### Developing sustainable health infrastructure and long-term oxygen availability.

In northwest Syria, MedGlobal worked with partners Rahma Relief and Violet Organization to build two industrial oxygen generator stations. One is located in Darkoush, Idlib, and estimated to serve between 500,000-750,000 people. The other is in Al-Dana, Idlib, and will cover the needs of approximately 400,000 people. **Together, they cover the oxygen needs of about 1 million people, or approximately 20% of the population of northwest Syria.** Each station has a large capacity oxygen generator, air compressor, dryer, 1,000 liter air tank, two 1,000 liter oxygen tanks, fillable oxygen canisters, and diesel-run electric generator. The oxygen purity is between 91-95%. Each generator station is able to fill up to 100 oxygen canisters daily, or about 30 cubic meters per hour. Both provide oxygen to nearby hospitals designated for COVID-19 treatment, as well as local clinics, quarantine centers, and ambulances.



### **Building health facility capacity to treat patients with medical oxygen.**

MedGlobal coordinated with local hospitals, health facilities, and quarantine centers to provide the most critically needed supplies based on their specific needs. Among our larger COVID-19 response, there was a specific focus on oxygen therapy. We specifically provided:

- **Non-Invasive Ventilators:** We provided 50 CPAP and 50 BIPAP machines, types of non-invasive ventilators. While more expensive than oxygen concentrators, they play an important role in management of critical COVID patients and are easier to use than invasive mechanical ventilation.
- **Ventilators:** MedGlobal distributed 10 ventilators to health facilities. Ventilators pump air with extra oxygen into patients' airways when they are unable to breathe adequately on their own. They can function as life-support machines, keeping patients alive if their lung function has been severely impaired, such as from COVID-19.
- **Pulse Oximeters:** We provided 5,000 pulse oximeters to health facilities. These are noninvasive tests that measure the oxygen levels in blood, critical for clinical management of COVID-19 patients.
- **Bag Valve Masks:** We provided 500 bag valve masks to health facilities. These devices provide positive pressure ventilation to patients who are not breathing adequately.

This hospital capacity building program is expected to serve over 91,500 patients within a year of its launch.

### **Creating at-home treatment options.**

In many parts of Syria, health facility care for COVID-19 is inaccessible or unrealistic. Based on need, we worked with trusted local NGOs, nonprofit hospitals, and nursing homes across seven governorates to provide oxygen through comprehensive at-home treatment options in areas where health facility care is inaccessible or unrealistic. We provided at-home treatment through procuring and distributing supplies - namely, more than 300 oxygen concentrators to assist with breathing and pulse oximeters to measure their oxygen levels - to our partners, who would then lend the supplies out to patients in need for at-home treatment for free. Home nursing teams followed up with patients to assure safe and correct use of the equipment, educate patients and families, respond to health complications, begin intravenous catheters for medications as needed, and assess progress. In some cases, our team provided virtual tele-health consultations to individual patients. When a patient recovers, each concentrator and pulse oximeter is returned to the NGO or facility following use and provided to future patients in need. This provides a sustainable oxygen supply for patients dealing with COVID-19, and can be used in the future for patients with respiratory issues who need at-home treatment, particularly those with disabilities and the elderly.