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Syrian Medical Voices from the Ground: The Ordeal of Syria's Healthcare Professionals





The Center for Public Health and Human Rights (CPHHR) is an academic center housed in the Department of Epidemiology at the Johns Hopkins Bloomberg School of Public Health. Founded in 2004, the Center's mission is to bring the tools of public health research to fulfill the rights of the world's most disadvantaged people to health and human dignity. Its interdisciplinary faculty and global partners empower people and advance policy by government and global institutions to protect health and human rights.

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*"Every time we use a new figure in relation to the Syrian crisis,
we say that it is unprecedented.
We have run out of words to fully explain the brutality of violence
and callous disregard for
human life which is a hallmark of this crisis."*

- Valerie Amos, UN Chief for Humanitarian Affairs

1. Executive Summary

This report recounts the experiences of 27 physicians and other health workers in Syria who struggle to provide trauma care and health services to a population under assault. The goal of this report is to go beyond statistics and offer a ground-level view of the daily experiences and insights of Syrian health workers in opposition-controlled areas – not including Islamic State (ISIL) controlled territories. Interviews informing this report were conducted with medical personnel currently working or having recently worked in field hospitals in Aleppo, Idlib, Latakia, Hama, and Darayya in rural Damascus, and took place in Gaziantep, Turkey in late October 2014.

In 2014, violence in Syria reached unprecedented levels, leading to hundreds of thousands of injuries and tens of thousands of deaths. At the same time, the Syrian health-care system has collapsed and the country's remaining healthcare professionals are unequipped to meet the medical needs of civilians. The results are grim, and Syrian medical professionals are being forced to bear inconceivable burdens.

In Syria, civilians as well as healthcare personnel, medical facilities, and ambulances are deliberately and routinely targeted as part of the military strategy of the Syrian government. In an attempt to provide ongoing care to the injured, health workers have opened makeshift field hospitals in homes, factories, and farms, often moving from place to place as they suffer damage or destruction. Only two of the facilities where the individuals interviewed for this report worked escaped attack during their tenure, and one of those was hit after the physician interviewed had left. However, as these field hospitals are hidden, even the extensive documentation of attacks on health workers and facilities in Syria inevitably underreport the extent of attacks.

In addition to killing and injuring people, the bombing destroys important equipment and impedes resupply and repair. Almost all field hospitals lack CT scanners, most have only basic X-Ray equipment, and few have intensive care units or ultrasound machines.

“There is no safe place in Syria.”
- Syrian cardiologist

“Working in a field hospital is like death.”
- Syrian general practitioner



Beyond these common shortages, each field hospital lacks some essential equipment, such as incubators, oxygen, and in two cases, properly tested blood. Electricity for field hospitals is almost always produced by generators, and many of them have less capacity than needed.

The violence inflicted on health workers and facilities has driven most health workers in Syria to flee the country, adding further burden on those who remain. Despite the severe supply shortages, the lack of trained medical personnel is the biggest challenge to healthcare provision in opposition-controlled areas.

The injuries doctors confront are horrific in part because of the Syrian government's widespread use of barrel bombs – oil-drum sized containers filled with shrapnel, bolts, and sometimes even incendiary material and weaponized chemicals, and dropped from helicopters. One doctor reported seeing shrapnel the size of a human hand in a patient he treated for barrel bomb injuries. Another doctor witnessed a mother and daughter whose bodies had been blown apart while their hands were still clasped together. Overstretched medical staff must confront mass casualties from the combined impact of bombings and secondary attacks on rescue workers. One field hospital in Aleppo averaged 50-75 war-related trauma cases a day between January and March 2014, yet only 13 surgeons and a total of about 30 doctors serve 300,000 people in Aleppo. Often the number of daily injuries leads to wrenching triage decisions. One surgeon reported: "If an operation is likely to take more than two hours, we have to forget it and the patient dies." Another respondent said: "Once beds are filled, there is nothing to be done for others."

In the Aleppo governorate, every major field hospital has been bombed multiple times. Most field hospitals have had to move to basements to seek safety during attacks. Surgeons have operated in the midst of attacks, or resumed as soon as generators could be restarted. One of the surgeons reported that in February 2014 he was in the operating theater when the hospital was hit by a barrel bomb. The windows shattered, doors were broken, bricks came off the façade, and the generator stopped. "Twenty minutes later, we got the generator going and I returned to the operation," he said. In many cases though, field hospitals must close for days or weeks while damage is repaired or equipment is moved to more secure locations. Providing trauma care in these circumstances is staggeringly difficult. Specialists such as pulmonary and vascular surgeons needed to treat complex injuries are usually unavailable. Many health workers have had to perform at levels far beyond their training.

In the Idlib governorate, a medical care coordinator reported that 15 field hospitals have been attacked by barrel bombs, missiles, cluster bombs, and other ordnance in the past year. Multiple field hospitals have been attacked three or more times in 2014 alone. While the physicians and nurses confront 4,500 traumatic injuries a month, they lack electricity, generators, and adequate instruments. The destruction of so many hospitals has had a spillover effect on the remaining facilities, creating a huge increase in demand. A field hospital in Darkush has experienced an increase in daily caseload from about 15 patients to 200-250 patients, 20-30 of them for war-related injuries, because there is nowhere else for the injured to go. Patterns are similar in Latakia and Hama governorates.

In besieged areas of Syria such as Eastern Ghouta, the dangers to civilians and health workers are, if anything, greater. During some periods of 2014 shelling has been almost constant. In the Zibdine area, an attack during the summer of 2014 killed the entire medical staff of a hospital, consisting of a doctor and seven nurses. Food, fuel, serum, and resources for trauma care are even more limited in the besieged areas of Syria, increasing costs and making supply purchase even more difficult. In addition to attacks on facilities and health workers, individuals who bring supplies into besieged areas risk arrest.

As a result of these attacks, many patients avoid field hospitals because they are considered so vulnerable to attack. One physician from Aleppo said: "Unless they feel their life is in danger, many people won't go to hospital because it is targeted for bombardment."

Two physicians reported that fear of travel and an understanding that the hospital is a target has led to a 50% decrease in clinic visits and surgery cases, even though the level of violence has not decreased. Ambulances as well as facilities are consistently attacked, including by missiles as they travel on roads. Two weeks after the interviews for this report were conducted, a colleague of the health professionals interviewed was killed, along with a driver, on the road from Aleppo to Turkey. The danger of travel deters patients from seeking routine or specialized care. One physician reported that maternal mortality appears to be increasing because of the complex logistics of referral and dangers of travel, especially at night, to give birth.

The large number of traumatic injuries, severe shortages of staff, and vulnerabilities of facilities has led to a huge decrease in availability of care for other conditions. As one doctor in Aleppo said: "Because of the bombardment, we have to concentrate on trauma cases, so primary care has decreased." At the same time, decreased availability of safe drinking water, exposure to cold and unhealthy living conditions for displaced people, decrease in vaccination coverage, and appearance of infectious diseases previously uncommon in Syria, including measles, typhoid fever, polio, and Leishmaniasis, has put the population's health at greater risk. There is little treatment available for chronic diseases such as heart disease, hypertension, cancer, diabetes, and kidney disease.

Healthcare workers are further targeted and made vulnerable through the threat of arrest, detention, and torture. Medical care to opponents of the government was deemed a criminal offense early on in the conflict, resulting in the arrest and killing of dozens of medical workers. Of the 25 Syrians interviewed, six had been arrested and tortured, two of them twice. Others had been threatened or narrowly escaped arrest. Once in detention, interrogators demanded confessions that they had treated members of the opposition. One doctor said: "They told me that if I didn't admit to working in a field hospital they would torture me more." Another said: "The most important thing was not to reveal my role in medical work." They knew, and were told by interrogators, that doctors were tortured worse than other prisoners.

Exposure to constant risk of death, overwork, lack of pay, and the horror of what they witness daily has taken a huge toll on the medical staff. Every medical worker interviewed experiences trauma, though psychological support is virtually non-existent and medical workers rarely share their experiences or feelings. Medical personnel are overworked, demoralized, and depressed. One said: "I cannot forget the sight of amputated limbs, severed heads, and horrible cranial injuries." Another recounted that during the chemical attacks of August 2013 in rural Damascus, doctors broke down crying as 22 victims died for lack of equipment. It still haunts him to think of the fathers and mothers.

The deprivations and dangers of medical practice in opposition-controlled areas of Syria help explain why the vast majority of doctors and other health professionals have left. Those who remain have shown enormous courage and resilience, but they and the people they treat continue to face brutal assaults. The door for the international community to engage, support, and protect healthcare workers and civilians in Syria is still open.

When asked what would help them the most, almost without exception the interviewees said: "Stop the bombing."

2. Introduction

Since the beginning of the conflict in Syria, healthcare has been withheld as a tool of war. One of the most alarming features of the conflict has been the denial of medical care to those from opposition-controlled and affiliated areas by the government as a matter of policy.¹ Healthcare has been denied to Syrians through lack of access, prevention of aid delivery, removal of medical supplies from aid convoys, and widespread attacks on medical facilities and health workers. Syria's government forces have targeted doctors and health workers providing care to injured demonstrators, members of the opposition, or civilians injured in opposition-controlled areas. In the past two years, the government has embarked upon an even more aggressive strategy of using air power – from missile-firing jets to helicopters dropping barrel bombs – to attack medical facilities, personnel, and ambulances as a means of denying care to the wounded and forcing civilians to flee the areas around hospitals. Although indiscriminate and sometimes targeted attacks on health facilities and personnel have been features of war in the last half century, the Syrian strategy of inflicting catastrophic injuries on civilians and then methodically targeting institutions and personnel who would treat them is uniquely horrifying. The consequences of this strategy are devastating to the lives and health of civilians who remain in Syria, including the health workers struggling to save them. Syria is the most dangerous place in the world to be a doctor.



Despite high levels of targeted violence, members of the Syrian medical community have been the backbone of crisis response and relief, risking their lives in order to save lives. They have operated on patients while barrel bombs fall on surrounding neighborhoods and even the facilities themselves, and have coped with a grave shortage of staff, supplies, and electricity. They have created an underground healthcare system to treat patients in relative safety, using sandbags to secure makeshift emergency rooms. They have acted as first responders while being threatened with airstrikes, detention, torture, harassment, and even death for treating patients.

This report provides a ground-level view of healthcare in opposition-controlled areas of Syria based on interviews with health professionals working in field hospitals in those areas. It explores the uses and consequences of violence against healthcare professionals and facilities and the efforts of the Syrian medical community to respond to the evolving crisis. It provides a glimpse into the realities that civilians and the medical community in Syria face.

¹ Human Rights Council: Twenty fourth session, Agenda item 4 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=ja&uact=8&ved=OCDQQFjAE&url=http%3A%2F%2Fwww.ohchr.org%2FEN%2FHRC%2FRegularSessions%2FSession24%2FDocuments%2FAHRC-24-CRP-2.doc&ei=q1CUVJ3NGoi3yAT_plGgAw&usq=AFQjCNGa3scXMqBILDkX82F6yaOtPMWDtA&bvm=bv.82001339,d.aWw

3. Methodology

This report is a joint project of the Center for Public Health and Human Rights of the Johns Hopkins Bloomberg School of Public Health and the Syrian American Medical Society, based on 27 semi-structured interviews with a convenience sample of doctors, nurses, and other health professionals who were working or had recently worked in Syria. The individuals interviewed were recruited from the group of health professionals attending a medical training course held in Gaziantep, Turkey from October 25-27, 2014. Most attendees were working in opposition-held areas – not including Islamic State (ISIL) controlled areas – in northwest Syria, mainly in the Aleppo, Idlib, and Latakia governorates. One attendee from Hama governorate and one from Darayya in rural Damascus were also interviewed. Participants volunteered to take part in the interviews and were screened by SAMS staff to assure geographic diversity of respondents to the greatest extent possible. For security purposes no names of respondents were taken, and names of medical personnel given in this report have been changed for their safety. No names of existing hospitals are used in this report.

Of the 27 participants, 25 were Syrian health professionals. The two non-Syrian health professionals were American expatriates who recently worked in Syria. Twenty-five of the respondents were men and two were women. Of the Syrian respondents, 22 lived and worked in Syria at the time of the interviews. Of the remaining three, two recently managed to leave besieged areas outside Damascus and one had left Syria after release from detention in late 2013. The respondents included 18 physicians (14 surgeons, one cardiologist, two anesthesiologists, and one pediatrician), three nurses, three dentists, and the remaining three were laboratory, anesthesiology, and surgery technicians. Interviews with non-English speakers were conducted with an Arabic translator.

Incidents reported by respondents were cross-checked against incident reports from the Syrian American Medical Society, reports issued by the Independent International Commission of Inquiry on the Syrian Arab Republic,² the mapping of attacks on health facilities by Physicians for Human Rights,³ and reports of Human Rights Watch on barrel bombing and use of incendiary devices. Attacks not elsewhere reported were not independently confirmed. The detailed firsthand knowledge of respondents, the consistency of the accounts, and the forthrightness of interviewees in stating which facilities have not been attacked were all taken into account to assess credibility of incident reports.

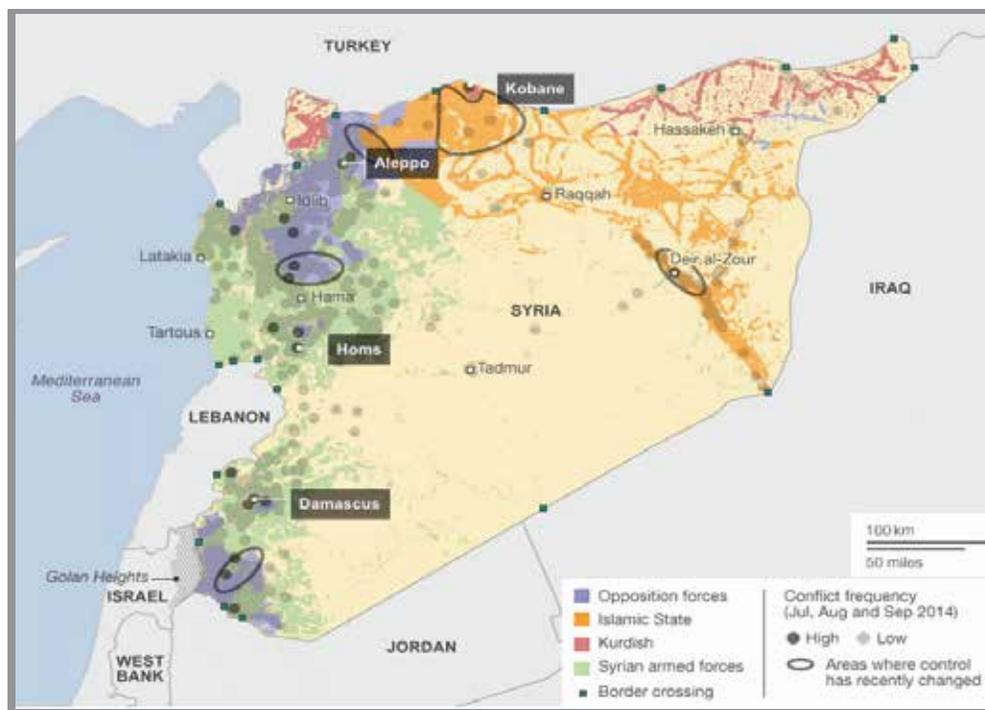
² <http://www.ohchr.org/en/hrbodies/hrc/iicisyria/pages/independentinternationalcommission.aspx>

³ https://s3.amazonaws.com/PHR_syria_map/web/index.html

4. Background

a. The Conflict's Impact on Civilians

In March 2011, after the arrest and torture of teenagers in Deraa who painted revolutionary graffiti on a school, and inspired by the Arab Spring in Tunisia, Egypt, and Libya, pro-democracy demonstrations began in Syria. The government of President Bashar Al-Assad, who took over the presidency after the death of his father, responded by violently putting down the protests, sending tanks into major cities and opening fire on protestors. Over the next year and a half, the violence against civilians escalated and crossed the threshold into armed conflict. As the conflict evolved, the number of armed opposition groups proliferated.



Map of Syria Conflict

Now in its fourth year, the complex and protracted conflict in Syria has led to the worst humanitarian disaster of recent times, with an almost immeasurable toll on the Syrian people. Daily flagrant breaches of international human rights and humanitarian law by pro-government forces and by non-state armed groups have subjected civilians to both indiscriminate and deliberate attacks, as well as denied them critical humanitarian assistance.⁴

As the conflict became increasingly militarized, government forces attacked populated civilian areas and facilities such as hospitals, schools, bakeries, homes, and market places. Torture, detention and enforced disappearance, and internationally prohibited chemical weapons have all been used against civilians.

⁴ Human Rights Watch, World Report 2014 <http://www.hrw.org/world-report/2014/country-chapters/syria?page=1>

⁵ Syria Needs Analysis Project, Regional Analysis, Syria, 13 October, 2014. http://www.acaps.org/reports/downloader/quarterly_report_oct_2014/100

The Syrian government has also severely obstructed access to critical humanitarian relief. According to multiple reports of the UN's Independent Commission of Inquiry on the Syrian Arab Republic and human rights groups, these and related acts by the Syrian armed forces and security agencies have flagrantly violated requirements of international human rights and humanitarian law.⁶

In August 2014, the UN Office of the High Commissioner for Human Rights reported 191,000 verified deaths in the Syrian conflict, but that the number of civilian deaths was undetermined.⁷ The Syrian Observatory for Human Rights puts the total number of deaths as of January 2015 at 206,603, of which 63,072, or around a fifth, are civilians.⁸ The Violations Documentation Center in Syria counted 78,999 civilian deaths as of December 2014.⁹ According to the World Health Organization, an additional one million people have been wounded during Syria's conflict, up from 500,000 in December 2013.¹⁰ In other words, over half of the injuries to people in Syria have taken place within the last year.

The UN Office of Coordination of Humanitarian Affairs estimates that 10.8 million people have been displaced by the conflict, 7.6 million internally. A total of 12.2 million people inside of Syria are in need of assistance, 6.8 million people face severe food insecurity, and 11.6 million people require urgent access to water and sanitation. Over 2.4 million children under five years old are at risk of malnutrition. With an estimated 1.2 million houses damaged or destroyed, 1.6 million people are in urgent need of shelter. By the end of October 2014, UNOCHA estimated that some 212,000 people remained trapped in 11 besieged locations, where food insecurity is most profound, with the populations suffering from hunger, malnutrition, and in the most extreme cases, starvation. Field reports suggest that this number may actually be much higher. Civilians under siege are largely unable to access critical life-saving medicines and supplies.¹¹

Aleppo, the most populous governorate with 23% of Syria's population, has an internally displaced population of almost 1.8 million people. Heavy bombardment by barrel bombs in the early part of 2014 caused an estimated 450,000 civilians in the eastern side of Aleppo city to flee to opposition-controlled areas to the north. According to Human Rights Watch, in the period between mid-February to July 2014, 650 major impact strikes took place in Aleppo residential neighborhoods held by armed groups opposed to the government, an average of almost five a day. The majority of these strikes employed barrel bombs.¹²

According to the Violence Documentation Center, almost 3,500 civilians have been killed by aerial bombardment in Aleppo alone from the beginning of 2014 to the end of October.¹³ In a two month period from mid-December 2013 to mid-February 2014 three Aleppo field hospitals received more than 4,500 trauma cases, resulting in more than 1,000 surgeries.¹⁴

⁶ <http://www.ohchr.org/EN/HRBodies/HRC/IIICISyria/Pages/IndependentInternationalCommission.aspx>

⁷ Megan Price, Anita Gohdes, and Patrick Ball, Updated Statistical Analysis of Documentation of Killings in the Syrian Arab Republic. Commissioned by the Office of the UN High Commissioner for Human Rights. 2014 <http://www.ohchr.org/Documents/Countries/SY/HRDAGUpdatedReportAug2014.pdf>.

⁸ More than 300000 people killed since the beginning of the Syrian Revolution. Syrian Observatory for Human Rights: <http://syrahr.com/en/2014/12/more-that-300000-people-killed-since-the-beginning-of-the-syrian-revolution/>

⁹ Violation Documentation Center in Syria, statistics, available at: <http://www.vdc-sy.info/index.php/en/>

¹⁰ <http://www.reuters.com/article/2014/12/19/us-mideast-crisis-health-idUSKBNOJXOV720141219>

¹¹ OCHA, 2015 Humanitarian Needs Overview, November, 2014. <http://reliefweb.int/sites/reliefweb.int/files/resources/2015%20Humanitarian%20Needs%20Overview.pdf>

¹² Human Rights Watch, Syria: Barrage of Barrel Bombs. July, 2014. <http://www.hrw.org/news/2014/07/30/syriabarrage-barrel-bombs>

¹³ Violations Documentation Center in Syria. <http://www.vdc-sy.info/index.php/en/martyrs/1/c29ydGJ5PWEua2l5bGVkX2RdGV8c29ydGRpcj1ERVNDf-GFwchJvdmlVkpXZp c2libGV8ZXh0cmFkaXNwbGF5PTB8c3Rh dHVzPTF8cHJvdmluY2U9NjB2RN dWx0aTOxM3xdGFy dERhdGU 9MjAxNC0wMS0wMXxl b-mREYXRIPTlwMTQtMTAtMzF8>

¹⁴ Aleppo City Medical Council, Aleppo City Under TNT Barrels, 2014.

In the Idlib governorate, the Idlib Health Director for the Interim Ministry of Health reported in June 2014 that there were about 4,500 cases of traumatic injuries every month. The Idlib governorate has more than 1.1 million people in need of humanitarian assistance, 708,000 of whom are IDPs. Similarly, the governorate has witnessed heavy battles in its major cities, and the deteriorating security situation has posed major challenges to the humanitarian response.¹⁵

b. Syria's Healthcare Crisis

Since the beginning of the conflict, all sides have interfered with medical care to further strategic and military aims, but government forces have committed the vast majority of assaults – 90% according to Physicians for Human Rights (PHR).¹⁶



Initially, as Syria's military and police targeted pro-democracy demonstrators and denied treatment to the injured, it harassed, detained, and tortured doctors who treated them. Medical care to opponents of the government was deemed a criminal offense, resulting in the arrest and killing of hundreds of doctors, nurses, and health workers. In 2011 alone, an estimated 250 doctors were arrested, interrogated, and tortured amid Syrian security force efforts to prevent protestors from receiving medical treatment.¹⁷

Physicians for Human Rights has tracked attacks on healthcare facilities and the killing of medical personnel. According to its reports, from March 2011 through December 2014, there have been 224 attacks on 175 separate medical facilities. During the same period PHR reported at least 30 instances of the use of barrel bombs on health facilities. Further, it has documented 599 medical personnel killed, all but 14 of whom by government-led assaults.¹⁸ As dramatic as these figures are, they considerably understate the extent of attacks on health care providers and facilities.

As a result of the targeting of hospitals and health facilities in opposition-controlled areas, physicians in Syria have created covert field hospitals, or makeshift medical facilities that are not easily identifiable, to serve the health needs of the population. These field hospitals have become the dominant source of healthcare in opposition-controlled territories in Syria.

¹⁵ OCHA, Syrian Arab Republic, Governorate Profile, June 2014, available at: <http://www.humanitarianresponse.info/system/files/documents/files/>

¹⁶ Physicians for Human Rights. https://s3.amazonaws.com/PHR_syria_map/web/index.html

¹⁷ Physicians for Human Rights. Syria: Attacks on Doctors, Patients and Hospitals. December, 2011. https://s3.amazonaws.com/PHR_Reports/syria-attacks-on-drs-patients-hospitals-final-2011.pdf

¹⁸ Physicians for Human Rights. Syria's Medical Community under Assaults. October 2014.

With equipment and support provided by humanitarian organizations these covert hospitals have become more sophisticated and grown in capacity, mimicking the services of standard hospitals in many ways.¹⁹ Some of the field hospitals have been set up in basements to protect civilians and staff from airstrikes. According to the Aleppo Medical Council, the five main field hospitals in Aleppo city treated almost 70,000 people in 2013, including performing more than 10,000 surgeries, both war-related and non-war-related.²⁰

While there has been some documentation of attacks on field hospitals, especially larger incidents, the difficulty of documenting attacks on these makeshift facilities has led to significant under-reporting of recent attacks.²¹

The World Health Organization has tracked the impact of the conflict on public health facilities which represent only a limited portion of the actual health centers in Syria. WHO's August 2014 situation report stated that only 45% of public hospitals were fully functioning, 34% were partially functioning, and 21% were not functioning at all.²² WHO also noted the wide-ranging consequences caused by the shortages of medical supplies – for example, insufficient access to safe blood increases the risk of exposure to blood-borne diseases such as hepatitis B. WHO has documented that vaccination coverage has dropped from 90% before 2011 to 52% in March 2014, increasing the risk of child morbidity and mortality from preventable diseases. Diseases once rare in Syria have reappeared, with 80 cases of polio, 2,600 cases typhoid fever, 7,000 cases of measles and tens of thousands of cases of Leishmaniasis.²³ Chronic malnutrition is common. When taking into consideration field hospitals and populations inaccessible to WHO, the impact of the conflict on overall health conditions is even greater.

In Aleppo, the health needs are especially severe. During the first half of 2014, many areas of Aleppo had no running water at all. In September 2014, more than 600,000 people in the Aleppo governorate were in need of health services. Most pharmacies have closed, dialysis centers can function only two days a week, anesthesia and chronic disease medications are scarce, and humanitarian access is highly constrained. Many facilities still lack running water and the availability of electricity is limited.²⁴

¹⁹ Fares Alahdab, Basel Albitar, Khaled Muhiedeen, Samer Attar, Bassel Atassi. Letter, Field hospitals in Syria. The Lancet 2014; 383:303.

²⁰ Aleppo City Medical Council, Third Annual Report, March, 2014. <https://acmc-sy.org/sites/default/files/ACMC%203rd%20Medical%20Report.pdf>

²¹ Private communications with Physicians for Human Rights.

²² Snapshots of the Status of Public Hospitals, December, 2014. http://www.emro.who.int/images/stories/syria/documents/HeR-AMS_Snapshots_PublicHospitals_Dec2014.pdf?ua=1

²³ OCHA, REACH and SNAP on behalf of the Humanitarian Liaison Group based in Turkey. Syria Multi Sectoral Needs Assessment, October 2014. http://reliefweb.int/sites/reliefweb.int/files/resources/141028_Syria_MSNA_Report_FINAL.pdf

²⁴ Private communication with Ibid.

5. Medical Voices from the Ground

a. Attacks on Health Facilities, Personnel, and Ambulances

The Syrian government introduced barrel bombs to its arsenal in 2013 and significantly escalated its attacks on civilians. A barrel bomb is an oil-drum-sized container filled with explosives, bolts, hardware, scrap metal, and sometimes includes weaponized chemicals such as chlorine. They are usually dropped from helicopters. The bombs explode with enormous force and create zones of destruction larger than many other weapons. The force of the explosion can amputate limbs and force large pieces of shrapnel into internal organs. Barrel bombs have not replaced other forms of attacks – they have added to the existing arsenal of missiles fired from planes, sniper fire, tanks, and more.

Surgeons who were interviewed explained that the force of the blast from barrel bombs creates many types of injuries, including limb amputation and the penetration of large pieces of shrapnel into internal organs. Surgeons and other medical professionals interviewed said they had not previously seen such large numbers of devastating and destructive injuries from conventional weapons prior to the initiation of the barrel bombing campaigns. One doctor, still horrified by the image, described:

“The bodies of a mother and daughter were blown apart but their hands were still clasped together.”

A nurse and lab technician who worked in a burn center reported that based on the burns they saw, some barrel bombs likely contained incendiary material, adding to the complexity and urgency of treatment.²⁵ Two respondents also cited the presence of white phosphorus, a chemical substance that can be used as an incendiary weapon. Where white phosphorus was used, the burn experts observed its ability to penetrate muscle tissue cells, causing patients to hallucinations and severe pain.

²⁵ This testimony is consistent with findings by the UN Commission of Inquiry on the Syrian Arab Republic, UN Commission of Inquiry on Syria, 7th Report of the UN Commission of Inquiry on Syria, A/HRC/25/65, February 12, 2014, <http://www.ohchr.org/EN/HRBodies/HRC/IIICISyria/Pages/Documentation.aspx> Annex VI, paras. 3, 4, and 22 and a report by Human Rights Watch and the Harvard Law School Human Rights Clinic, Ukraine, Syria: Incendiary Weapons Threaten Civilians, November 11, 2014. <http://www.hrw.org/news/2014/11/10/ukraine-syria-incendiary-weapons-threaten-civilians> p. 4.

Dr. Mohamad* was a general surgeon working in a military hospital as a civilian when the war broke out. When Aleppo city became divided, he went to work in the eastern opposition - controlled area. Initially, he worked at Dar Al-Shifa hospital, which was destroyed in 2012 by a missile attack, in which 35 people were killed.

He moved to a series of field hospitals in Aleppo, and for the ten months prior to the interview was working in a field hospital in the suburb of Haritan. Each hospital has been attacked and damaged, but he says that his current hospital has only experienced barrel bombs dropping close by and no direct attacks.

Two of his colleagues have been killed in ambulances, one within two weeks of the interview.

Though his hospital manages with the equipment it has, there is an acute shortage of doctors, creating a high workload. Moreover, the work takes a toll.

“I have seen ruptured spleens and shrapnel the size of a human hand.”

He had a question for the interviewer:

“Why do the nations abandon us?”



* Names have been changed for security

Helicopters have dropped barrel bombs, which cannot be accurately targeted, in highly populated civilian areas including on or in the vicinity of hospitals, and causing mass casualties of up to 100 people. Physicians from Aleppo repeatedly described secondary barrel bomb attacks on first responder rescue teams and ambulances that converge on the scene to evacuate victims after an initial attack. A surgeon from Aleppo described the effects of a barrel bombing in front of a bakery next to his hospital, which caught fire: “A fire truck came to the scene but was hit with bullets from a helicopter. The helicopter also fired at the hospital.” Emergency medical care for the injured is severely constrained when the field hospitals and personnel seeking to treat the wounded are themselves under attack.

Only two field hospitals where the respondents worked had not been attacked during their tenure at the facility.

A burn treatment center in Atmeh, Idlib, a few kilometers from the Turkish border, has had no recorded hits; and near the Bab al-Hawa border crossing, an expatriate emergency physician who worked in a field hospital in May 2014 reported that during her tenure there were aerial bombardments in the area three to four times a week but no direct hits on the hospital.²⁶



Aleppo

The seven physicians interviewed who practice in Aleppo – representing more than 20% of all physicians still working in the opposition-held territory of Aleppo – and a surgery assistant reported that every hospital there has been bombed multiple times, starting well before the barrage of barrel bombs. As one doctor observed:

“The main targets seem to be hospitals, schools, and bakeries.” The onslaught of barrel bombings has affected every facility in Aleppo.

A plastic surgeon spoke about the field hospital set up after the destruction of Dar Al-Shifa Hospital in Aleppo in 2012. It is a large building with five floors and functions as a trauma hospital with other specialized forms of care. It is located in a heavily bombarded residential area and has been directly hit twice. An anesthesiologist reported that the hospital was damaged in May 2014 as a result of a bomb that struck in the street about 200 meters away. No one in the hospital was killed, but the damaged hospital had to close temporarily. A second attack came six months later, when barrel bombs again fell near the hospital. Although there were no injuries, the top floor was significantly damaged, forcing the hospital to close again for 10 days.

The hospital’s staff is in the process of trying to move all medical services to the basement.

²⁶ The Syrian American Medical Society documented that this hospital was later attacked on June 7 with two thermobaric rockets, seriously damaging the building, killing a patient, and injuring two nurses

Another field hospital was created to meet the need for a trauma center in the eastern neighborhoods of Aleppo city, and has the second highest caseload of trauma cases in Syria. It was bombed multiple times in 2014 according to a surgery assistant. In early February 2014, a rocket hit the field hospital on one of the higher floors, killing two patients and injuring many others. "I was in the basement so escaped harm," the surgery assistant said. The hospital was out of service for a week except for emergency cases. In mid-June 2014, a barrel bomb hit the hospital after midnight, destroying its west wall. Two days later it was bombed again, resulting in further injuries to staff. In early July 2014, ambulances were hit in front of the hospital.²⁷

Two surgeons reported that a third field hospital in Aleppo was subjected to barrel bombing multiple times during the past two years, including the day before their interviews when a bomb struck 50 meters away from the building.



One of the surgeons reported that in February 2014, he was in an operating theater when the hospital was hit by a barrel bomb. The windows shattered, doors were broken, bricks came off the façade, and the generator stopped. He recounted:

“Twenty minutes later, we got the generator going and I returned to the operation.”

When asked about attacks from non-government armed groups, the physicians interviewed reported no attacks on hospitals and ambulances, but did report instances in Aleppo where fighters from

Free Syrian Army-affiliated units demanded priority treatment, threatening violence if the medical staff rejected the demand. In addition, one doctor told the story of a wounded fighter from the government forces who was shot in the abdomen and lungs. He said that the doctors performed four hours of surgery to save him, but the next day an FSA-affiliated opposition brigade killed him.

The health professionals also reported that one hospital near Aleppo, the largest medical complex in northern Syria, was taken over by the Syrian army for military purposes and used to shoot at civilians from the hill on which it was located. The hospital was completely destroyed by the ongoing fighting, bombed by both pro-government and opposition forces.

Idlib

In Idlib governorate, a medical care coordinator reported that 15 hospitals have been attacked in the past year, some multiple times.

In March 2013, a field hospital located in a suburb of Idlib – considered relatively safe because of its mountainous terrain – was attacked with cluster bombs, an internationally-banned munition type, dropped from helicopters. Two people were killed and more than 60 were injured in the vicinity of the hospital, which was again targeted with rocket and cannon fire from government forces in December 2013.

Another field hospital in a rural part of Idlib governorate was attacked by planes three times in 2014. In the late spring a rocket killed a doctor and nurse, and blew out windows and doors of the field hospital; it was out of service for 15 days. A second attack on the same hospital in late summer killed one patient and injured two, causing the hospital to close for five days. A third attack came just a few days before the interview, when a rocket hit 75 meters away from the field hospital. In all cases the hospital seemed to be the only target.

According to a general surgeon, a field hospital in the Jisr Al Shughor area of Idlib opened in April 2013 in a former cheese factory. It was hit by targeted missile strikes three times and once by a barrel bomb from a helicopter in 2014. The most recent attack came on September 9, 2014, when a rocket attack destroyed the field hospital's ICU and laboratory and knocked out windows, rendering the facility unusable. An ambulance driver was also injured in the attack.

A cardiologist in Khan Shaykhun, a suburb of Idlib city, reported that in late spring of 2014 cannons shelled the entire town and came close to hitting his hospital. Although there were no military targets in the area, the shelling assaults were repeated every two weeks, leading to many casualties.

“There is no safe place in Syria,” the doctor said.

Dr. Khaled* oversees medical services in Idlib. Before the war he was an orthopedic surgeon in Aleppo. In the Idlib governorate, there are 38 hospitals, 10 primary health care centers, and 100 advanced medical points. At least 15 of the hospitals have been attacked in the past 12 months.

Dr. Khaled was present twice during attacks, the first time when a missile hit outside a new orthopedic center that was about to open in March 2013. One person was killed. He recounted:

“We made repairs, and 10 days later it opened.”

The center was again attacked by missiles in the summer of 2014 and closed for a week except for emergencies. Ambulances are frequently hit by snipers, especially at night. It happens so often that, as Dr. Khaled put it:

“You get used to it.”

The medical staff in Idlib governorate have been reduced from several thousand to 250 people. They treat 4,500 traumatic injuries a month, but lack electricity, fuel for generators, and adequate instruments. There are insufficient immunizations to vaccinate children except for intermittently in a few areas. They have blood banks with tested blood, but no CT scanner, ICU, or incubators. They cannot perform neurosurgery and lack a vascular surgeon for amputations.

“We are demoralized and burned out,” said Dr. Khaled.

After another bombing 100 meters away the week before the interview, he said:

“I am thinking of leaving.”

* Names have been changed for security

In the summer of 2014, barrel bombs exploded above and to the side of the hospital during the night. Although the patients and staff escaped injury, the hospital's windows were blown out and the building was damaged, but it managed to remain open.

In rural Sarja, Idlib, a general practitioner reported that a field hospital located in a converted farm structure was targeted five or six times in 2014 but managed to escape a direct hit.

“Working in a field hospital is like death,” he said.

Six months ago an aircraft attacked the facility but missed by 500 meters. Everyone was evacuated and the facility was closed for several days. “We had other narrow escapes,” he said, from repeated attacks and the need for evacuations.

In the town of Kafrnobel, Idlib, an anesthesiologist reported an attack in the spring of 2014: “It was during Ramadan, when people were fasting, and a plane shot a missile at the hospital, killing a doctor, a nurse, and a baby in an incubator.” The attack damaged the hospital and its equipment, resulting in a 15-day closure for all non-emergency services. In late August 2014, a missile from a plane again targeted the hospital, killing a patient and damaging an ambulance. The hospital's windows and doors were damaged and it closed for a week. Three days before the interview another missile missed the hospital by 50 meters.



Hama and Latakia

Health professionals working in other governorates also described assaults on hospitals and ambulances. Two health workers reported attacks in an area of Hama where most of the original population had fled, which is now occupied by 20,000 displaced people. A nurse reported that the field hospital where he works in a suburb of Hama has been moved to three different locations due to continuing attacks.²⁸

In January 2014, an aircraft bombed a field hospital in Hama, temporarily forcing it to relocate to a farm house for a week. It then moved to a school, where it was attacked with barrel bombs, suspected to have been identified by the presence of ambulances. Its present location is now completely underground.

In the town of Salma, Latakia, a field hospital was destroyed by a barrel bomb in 2013, according to a nurse who worked there. The hospital then moved to an adjacent building. In October 2014, there were 25 air attacks in one day in the area, damaging the hospital and injuring three staff. In Rabiya, Latakia, a surgeon reported that barrel bombs have landed close by his field hospital and ambulances have had their glass blown out.²⁹

²⁸ The Syrian American Medical Society reports that the local population believes that the presence of this facility was the reason for the shelling, and threats were made against facility staff. SAMS medical personnel expressed concern that this kind of reaction to the presence of field hospitals would spread.

²⁹ SAMS reports that this field hospital was directly hit on November 19, 2014 by four rockets. The facility had to temporarily shut down and relocate to a new location.

Rural Damascus

As systematic as air assaults on health facilities in northern Syria have been, the assaults in besieged areas near Damascus have been even more extreme. Starting in July 2013, during the first five months of the siege of Darayya in rural Damascus, humanitarian access was totally cut off.³⁰ According to a dentist who left in late 2014, there were daily bombings. He said that during 2014, 50-60 rounds of bombings came in every day, including up to 25 barrel bombs daily. All six of the hospitals in that area have been destroyed and the field hospital where the dentist worked was hit three times in 2014.

In one incident during the fighting, five medical staff members went outside to attend to those wounded in an attack and government snipers shot at the rescuers, two of whom were killed. The dentist interviewed was shot in the neck and wrist.

The nearby region of Eastern Ghouta has also been under siege. In August 2013, it was the site of the largest chemical weapons attack in Syria. A dentist and logistician said that the Syrian government considers hospitals to be like other “military” targets that include civil defense facilities, schools, and crowded civilian areas such as markets. The dentist recounted an incident in September 2014 when an attack near a mosque wounded 170 people, 78 of whom died.

According to the dentist, the weapon of choice to attack Eastern Ghouta was aerial rockets, and barrel bombs were not often used. He reported that in the summer of 2014, five hospitals were attacked. In one attack on a small facility in Zibdine, the entire medical staff of the hospital, consisting of a doctor and seven nurses, were killed. In another Eastern Ghouta attack, three doctors were killed. Separate attacks on ambulances in August 2014 destroyed the vehicles and killed two paramedics. Targeted attacks like these forced most hospitals to move to basements. These facilities have done their best after that to offer care but have severe limitations due to the lack of staff and supplies, and their inaccessibility to assistance.

b. Impact on Emergency and Routine Care

Coping with the number and severity of civilian injuries in Syria would be enormously challenging under any circumstance. Systematic attacks have rendered medical care, both for war-related trauma and routine medical needs, incredibly difficult. It is remarkable that despite the damage and destruction to health facilities and ambulances from attacks, shortages of staff and supplies, and threat of further attacks, many doctors and nurses carry on. However, the constraints are wrenching, and lead to terrible compromises and dilemmas for Syrian medical staff, as well as widespread suffering and death among the injured.

The impact of inadequate medical care is especially severe in mass casualty situations. According to a surgeon at an Aleppo hospital, the facility averaged 50-75 war-related trauma cases a day between January and March 2014, finally declining to about 10 per day in April and May, but has risen again since then. In other regions, a hospital can receive 30-50 trauma cases on a moderate day and more than 100 when there are major attacks. Because of this caseload, triage decisions become excruciating for medical personnel. One surgeon reported:

“If an operation is likely to take more than two hours, we have to forget it, and the patient dies.”

Another surgeon explained that during heavy bombardments that cause many injuries, patients in need of surgery could only be offered first aid. As one respondent put it:

³⁰ <http://www.ohchr.org/Documents/Countries/SY/LivingUnderSiege.pdf>

“Once beds are filled, there is nothing to be done for others.”

The destruction of so many hospitals in certain areas has had a spillover effect in other parts of the country. One doctor explained:

“Because of destroyed hospitals, there is no healthcare [in parts of Syria]”.

As a result, hospitals in nearby regions experience a huge increase in demand. A field hospital in Darkush, in the Idlib governorate, has experienced an increase in daily caseload from about 15 patients to 200-250 patients, 20-30 of them for war-related injuries, because there is nowhere else for the injured to go.

Beyond mass casualty demands, three essential ingredients for appropriate trauma care are severely limited: access to hospitals, equipment and supplies needed for complex surgery, and sufficient numbers of trained medical staff, including specialists.

As all medical facilities and ambulances are subject to attack, the first obstacle to treatment of war injuries is the patient’s ability to reach a hospital. All the respondents reported destruction or severe damage to ambulances. The ambulances that remain are often attacked by missiles when they transport patients.

Two weeks before the respondents were interviewed, a colleague of the health professionals interviewed was killed, along with an ambulance driver, on the road from Aleppo to Turkey.

Even when ambulances have their markings removed, they are usually identifiable by their shape. At night vehicles are even more vulnerable if their lights are on, since they are then easily targeted by airstrikes. As a result, travel at night requires the choice between two dangerous alternatives: driving with lights on, at risk of air attack, or with lights off, driving blind. These dangers also deter referral of complicated cases to Turkey. The dangers of travel can deter patients from coming to field hospitals, sometimes resulting in patient deaths.



One respondent spoke of a 10-year-old in need of emergency care but afraid to cross the front line, who died in Idlib.

Burn victims need to get to a facility with the capacity to treat their wounds quickly, but because of the difficulty of travel, many simply do not make it. The staff at one burn center explained that war and displacement have impoverished much of the population, so people lack funds for transportation to the burn center and for family accommodations once there.

Attacks on ambulances are so frequent that they have affected routine services, especially childbirth.

One physician explained that in his area maternal mortality rates appeared to be increasing because of the complex logistics of referral and dangers of travel at night. Some women who are close to their delivery date therefore choose to have Cesarean sections to avoid the risk of traveling at night, but that decision creates additional demand on limited surgical capacity.

Compounding the problem of hospital access is fear of what happens to patients upon arrival at a hospital. People in many communities have learned that field hospitals are among the most dangerous places to be because they are targeted so frequently. One physician from Aleppo said:

“Unless they feel their life is in danger, many people won’t go to a hospital because it is targeted for bombardment.”

Two physicians reported that fear of travel and an understanding that hospitals are often targeted has led to a 50% decrease in clinic visits and surgery cases, even though the level of violence has not decreased.

Despite the difficulties of access and patient fear, the medical needs of communities, especially from traumatic injury and mass casualty events, are very high. As a result field hospitals have crushing caseloads and many operate well beyond their capacity in equipment and staff. Despite humanitarian efforts to supply equipment such as surgical instruments and medications needed for surgery, every respondent identified equipment missing in the field hospitals that the surgeons considered essential. Bombing destroys important equipment, and some has never been available. Almost all the field hospitals lack CT scanners, most have only basic X-Ray equipment, and few have intensive care units or ultrasound machines. Beyond these common shortages, each field hospital lacks essential equipment, such as incubators, oxygen, and in two cases, properly tested blood. Electricity for the field hospitals is almost always produced by generators, and many of them have less capacity than needed.

In besieged areas, the situation is even worse. Hospitals are under near-constant barrage and the need for basic medical supplies is even greater, but obtaining them is extremely dangerous. A dentist engaged in logistics and supply activities in Eastern Ghouta described shortages of food and water, affordable fuel for hospital generators, and serum.

In the hospital where another dentist worked, electricity for operations came from a car battery.

He said that 28 people have been arrested by the government for trying to bring supplies to their hospital – and he had a close call when medical supplies were found in his car. Only chance and bribery saved him. Furthermore, equipment often cannot be maintained. The same dentist said that one hospital has four chairs for renal dialysis, but lacks the tools to work the chairs and supplies to disinfect its machines.

For all the field hospitals, the most important shortage is staff.

The targeting of doctors, not only with bombs but also with detention and torture, has led thousands of physicians and nurses to flee the country. About 25-30 physicians, only 13 of them surgeons, remain in eastern Aleppo city to serve more than 300,000 people. In the Idlib governorate, the number of physicians declined from several thousand to 250. In besieged Eastern Ghouta an estimated 90% of the medical staff has left. Equally difficult is the shortage – and in most places the complete absence – of specialist surgeons to deal with complex injuries.



These include vascular surgeons, plastic surgeons, orthopedic surgeons, and neurosurgeons. In eastern Aleppo city, which has been hit hardest by barrel bombs, there are only two vascular surgeons and one plastic surgeon. In Idlib governorate, there is only one vascular surgeon. Anesthesiologists are rare as well, so anesthesia technicians must do the bulk of the work. One anesthesiologist who had left Syria recently returned to Aleppo because only one other anesthesiologist remained. Because of shortages, many health professionals are working in areas of practice beyond their training.

The attacks, shortages, and demands for trauma-related treatment have taken a toll on the capacity for other medical services in opposition-controlled areas. All respondents identified a litany of health care services that are essentially unavailable. As one doctor in Aleppo said:

“Because of the bombardment, we have to concentrate on trauma cases, so primary care has decreased.”

This is coupled with the deterioration of health from lack of clean water, electricity, and healthy living conditions, especially among internally displaced people who often live in makeshift camps. Some people are living in caves or the mountains to escape the bombing. In many areas, no primary care or vaccinations are available for children.³¹ Even antibiotics for common ear infections are unavailable in many places. The doctors have personally experienced the lack of resources to treat patients with chronic diseases including heart disease, hypertension, cancer, diabetes, and kidney disease, and reported seeing patients with infectious diseases including measles, typhoid fever and Leishmaniasis.

A cardiologist reported an increase in heart disease among young people, which he attributed to stress and fear.

The burdens of trauma care and the collapse of infrastructure has limited the ability to collect mortality data, but the doctors believe that deaths from treatable conditions, including measles, diarrhea, and heart and kidney problems, have increased. These reports are consistent with a 2013 estimate that more than 200,000 Syrians died of chronic diseases, a number that has likely increased since then and is higher than the number of people killed in the fighting.³²



c. Detention of Health Workers

The daily realities of providing healthcare in such extreme conditions take a great toll on physicians and other health workers. Many have experienced personal targeting and arrest.

One of the more remarkable findings of the interviews is that among the 25 Syrian health professionals interviewed, six had been arrested, two of them twice. All had been tortured while in detention. Another four health professionals interviewed narrowly escaped arrest.

Most of the arrests of interviewees took place early in the conflict. Three individuals were arrested in 2011, when pro-democracy demonstrations were taking place. One was arrested for having carried a sign that had the names of doctors who had previously been arrested, and two for participating in demonstrations against the killing of protesters. During incarceration, they were subjected to beatings and electric shock, but all three were released within a month.

³¹ SAMS is uses mobile clinics to provide vaccinations and primary healthcare to hard-to-reach areas.

³² <http://globalpublicsquare.blogs.cnn.com/2013/09/30/syrias-other-crisis/>

Security officers abused health professionals worse than most other prisoners. One physician said:

“They told me I was being treated worse because I was a doctor.”

From the earliest days, the greatest risk to the health professionals in detention was evidence that they had worked in a field hospital or treated members of the opposition. In some cases, the interrogators sought to gain confessions that the individual had treated members of the opposition. A surgeon who worked in both a public and a field hospital was arrested in Aleppo in May 2012, accused of working in a field hospital, and subjected to suspensions and electroshock. Although the allegation was true, he refused to admit it because he thought he would be killed if he did. He said:

“I was threatened with further torture if I didn’t admit I worked in a field hospital.”

In another case, a dentist was working in a field hospital when Syrian Air Force personnel burst in and killed 10 patients and two health workers. The dentist survived shots to his leg and hand, and was arrested. When brought to the detention facility, he received no treatment for his wounds, little food, beatings, and constantly subjected to verbal abuse before being released five months later. He considered himself fortunate:

“The Air Force group that arrested me didn’t communicate with the interrogators, so the interrogator didn’t know that I had medical training. If he had it would have been much worse for me.”

Another dentist who ran a field hospital was arrested in 2013 at a checkpoint. He was tortured, including being suspended from the ceiling for four days and suffering repeated beatings. In his case too, the jailers were unaware of his medical connection, which he thought saved his life:

“The most important thing was not to reveal my role in medical work.”

Other health professionals narrowly escaped. The director of one field hospital escaped only because a soldier he knew warned him of his impending arrest for treating members of the opposition. He and his family fled, but his farm and clinic were seized. The soldier who saved him was discovered and later killed by government forces. A doctor from Aleppo also reported that in 2012 his house was burned down by government forces.

Dr. Jamal* is a surgeon who, prior to the war, specialized in thoracic surgery. He was arrested in 2012 after treating a patient during a demonstration. At the time he was secretly working in a field hospital. After his arrest he was accused of many crimes, blindfolded, shocked with electricity, and made to stand for 20 hours.

“They told me that if I didn’t admit to working in a field hospital they would torture me more, but I did not for fear they would kill me.”

Because of the long hours he worked at his public hospital (non-field hospital) position, he thought his supervisor would provide an alibi for him, and it worked. He was released as there was no confession or other evidence of his working in a field hospital.

He now works in a suburb of Idlib considered relatively safe, though in December 2013 it was attacked by rockets and in March 2014 cluster bombs were dropped from a helicopter, killing one and injuring 60.

The hospital operates over capacity, even more so because bombing of other field hospitals has increased their workload.

“We can’t meet the needs of the population,” he said.

In his work there, he has seen measles, polio, and tuberculosis, which he never saw before.

* Names have been changed for security

d. Psychological Impact on Health Workers

The psychological trauma of arrest, detention, and torture, and threat of it, is matched by the everyday circumstances of struggling to meet the needs of a population under attack. Health workers are overworked, demoralized, depressed, and consistently affected by trauma and secondary trauma. They suffer from an overload of work due to lack of staff in the hospitals, the reality of their personal danger, inability to adhere to standards they recognize as needed due to lack of equipment and staff, low or no pay, and 15-16 hour work days. This is combined with the stress and horror of what they witness on a daily basis. Humanitarian organizations fund their work, but many medical practitioners have not been paid in months. One interviewee reflected:

“We have difficulties with our families, as we are away, in constant danger, and not getting paid.”

Additional stresses can come from the very people they are trying to help, who blame the doctors for the dangers they face from bombings and the inadequate staffing.



Dealing with the victims of attacks is emotionally difficult – especially seeing lost limbs and lives. Witnessing the injuries they see takes a toll. One said:

“I cannot forget the sight of amputated limbs, severed heads, and horrible cranial injuries.”

Another described the trauma of seeing horrible injuries to young patients. He recounted that during the chemical attacks of August 2013, doctors broke down crying as 22 of the victims died for lack of equipment. It still haunts him to think of the fathers and mothers.

Finally, the interviewees have all lost many colleagues – in addition to family, friends, and community members – to snipers, bombs, and killings in detention. All feel a constant sense of sadness.

Psychosocial support is virtually non-existent inside of Syria, and health workers rarely share their experiences and feelings. Conversations focus on the pragmatic. One said:

“We take tea in the night and talk about how to get medicine.” Some of them cope by thinking that even if they die, they will have saved others during their lives. “If I die but 100 live it will be worth it. I am doing my job,” said a surgeon. One doctor reported that after a barrel bombing, if they survive and no one is killed, they dance the dabka in celebration.

Some think often of escaping, as so many of their colleagues have. Others feel stuck, unable to leave and unable to change their situation.

None of those interviewed, however, thought that counseling for the psychological trauma was the priority.

When asked what would help them, almost without exception the respondents said: “Stop the bombing.”

6. Conclusion and Recommendations

The unprecedented attacks on healthcare in Syria demand the world's attention. Syrian doctors, nurses, dentists, and other health workers are providing care to people in dire need while their very lives are at risk. Their courage and dedication is inspiring, but they do not seek recognition, only protection.

The international community must prioritize relieving the suffering of and protecting civilians and health workers on the ground. They should take action on the following:



Protect civilians.

- The international community must take substantive action to end the targeting of medical facilities and personnel and the indiscriminate attacks on civilians and civilian infrastructure, particularly through the use of barrel bombs and other airstrikes. There is a strong humanitarian case for the creation of a protected zone in northern Syria where civilians can seek refuge from aerial bombardment and essential services like medical care, education, and humanitarian relief can be provided without fear of aerial attack. The creation of such a zone would also stem the flow of refugees into neighboring countries, which are suffering under the weight of their refugee burdens.

- Security Council members should immediately revisit and enforce UN Security Council Resolution 2139 – which calls for unhindered humanitarian access, respect for the principles of medical neutrality, and the immediate cessation of attacks against civilians – in light of noncompliance by all parties to the conflict. The U.S. should take a leadership role in this effort.

Support Syrian health workers.

- Health workers in Syria need financial and psychological support. The international community should prioritize supporting and empowering Syrian medical personnel through salary assistance, trainings with integrated psychosocial support, and opportunity creation.

- There should be a regional or international effort to help Syrian medical students whose schooling was interrupted by the crisis to complete their training. Hundreds of medical trainees have been unable to finish the education necessary to obtain an accredited degree. Certified Syrian health workers are essential to contribute to medical work in Syria now and for the future of the country.

Increase assistance and support for local capacity.

- Many donor governments, particularly the U.S. and UK, have been generous in contributions to the Syria response and relief efforts. Likewise, the governments of Turkey and Jordan have played an exceptional role in providing humanitarian and medical relief to Syria. However, UN appeals are consistently and dramatically underfunded. All states – particularly the Gulf, EU, and BRICS countries – should increase their humanitarian funding to match the scale of the Syria crisis, and ensure that pledges made are delivered. All members of the donor community have a responsibility to contribute to the critical humanitarian response.
- The U.S. should carve out and increase funding to the Syrian-led and Syrian diaspora-led NGOs that are most effective at delivering aid, providing services, and supporting local civil society. Syrian-led and Syrian diaspora-led NGOs in particular have a strong understanding of local needs, connections with local partners, and the ability to efficiently and effectively provide lifesaving assistance to Syrians in hard to reach areas. It is essential to invest in resourcing and building the capacity of NGOs that will take the lead in rebuilding the country and continue to work in Syria after the crisis ebbs.

Increase access.

- The U.S. should urge that UN Security Council Resolution 2191 – the renewal of UN Resolution 2165 authorizing cross-border and cross-line aid into Syria – be broadly interpreted and implemented in order to expand the scope and reach of cross-border and cross-line assistance. UN agencies should operate with a broadened interpretation of UN Resolution 2191 beyond the provision of supplies to include protection and services, particularly medical services.
- In accordance with UN Security Council Resolution 2139, which mandates that all parties “immediately end the siege of populated areas,” the UN should send humanitarian aid convoys, including medical assistance, into besieged areas immediately. The Security Council should take further action in the face of noncompliance.

Hold perpetrators accountable for war crimes and crimes against humanity.

- In light of findings by the UN's Independent International Commission of Inquiry on the Syrian Arab Republic that Syrian military units and security agencies, as well as certain non-state armed groups, have flagrantly violated international human rights and humanitarian law, the Security Council should refer Syria to the International Criminal Court or create an ad hoc international tribunal for Syria. The most serious perpetrators should be indicted for war crimes and crimes against humanity.
- The international community should support civil society organizations and local Syrian communities to monitor, document, and report violations of international humanitarian and human rights law in the most effective and standardized way possible. The Independent International Commission of Inquiry on the Syrian Arab Republic should be further strengthened and empowered.

