

BLAST INJURY

The reverberating health
consequences from the use
of explosive weapons



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INTRODUCTION

Over 338,000 people have been killed or injured by explosive violence in the last nine years, Action on Armed Violence’s (AOAV) explosive violence monitor shows. Of these, at least 251,000 have been civilians; 74% of total casualties. However, the impact of explosive weapons stretches far beyond the immediate blast and casualties, as research into the reverberating effects of explosive violence by AOAV,¹ Save the Children,² Article 36,³ and Humanity and Inclusion,⁴ among others, has shown.

While the health consequences of conflict have long been a concern, it is only recently that there has been increased awareness of the need for more research into the specific health impacts of explosive weapons on their direct and indirect victims.

This report seeks to analyse, summarise and expand on this research. It does so by focusing on four key areas where explosive violence impacts health systems. We examine, in turn, the physical impacts; the psychological impacts; infrastructural and personnel damage and disruption; and end on a review of access to healthcare. Both the direct and indirect health impacts from the use of explosive weapons are considered throughout.

This report seeks to illustrate some key health concerns that arise from explosive weapon use by focusing on two on-going conflicts: the conflict in eastern Ukraine which began in 2014; and Syria’s nine-year-long conflict, which began in 2011.

In Ukraine, the conflict is located in the eastern part of the country, involves few actors and sees



A child at a refugee camp in Bekaa Valley.



A woman cycles past a bombed building in eastern Ukraine.

predominantly shelling, landmines and victim-activated improvised explosive devices (IEDs). In Syria, conflict has been seen across the country at various times and, due to high numbers of both state and non-state actors involved, the variety of weapon types has been considerable. These have included cluster munitions and improvised air-dropped bombs, such as barrel bombs used by regime forces and improvised air-dropped munitions by ISIS. Both conflicts have caused significant harm to the health of local populations and have had reverberating and ongoing deleterious impacts on healthcare in their own and other countries.

METHODOLOGY

AOAV carried out desk-based research, as well as interviews and on the ground investigations in Ukraine and at the Syrian border in Lebanon. Interviews were conducted with healthcare workers, academics, NGO personnel, civilians and other experts. 120 surveys were conducted among the refugee population in Lebanon focused on access to healthcare. The results of this survey are discussed throughout. The data on explosive weapons comes from the Explosive Weapons Monitor Project. For the methodology please see our latest Explosive Violence report⁵

PHYSICAL HEALTH IMPACTS OF EXPLOSIVE WEAPONS

- AOA V recorded more than 251,000 civilian casualties from explosive weapons globally between 2011-2019. This consisted of 89,000 civilian deaths and 162,000 injuries.
- A study of blast casualties in a Médecins Sans Frontières hospital in Syria's Raqqa found that 42% of blast-related injuries involved soft-tissue damage; 22% involved open-fractures; 11% were torso injuries; and 11% were traumatic amputations.
- By 2016, the mortality rates in the war-torn Donetsk region of Ukraine were more than double the birth rate.
- In one week of early February 2020 alone, dozens of children perished due to the terrible conditions within the displacement camps in Syria's Idlib.

Between 2011 and 2019, AOA V recorded more than 251,000 civilian casualties from explosive weapons, as recorded in English language news media around the world. This figure breaks down into 89,000 civilian deaths and 162,000 injuries: overall, an average of ten civilian deaths and injuries were recorded from each explosive incident.

These reported figures might, however, just be the tip of an iceberg. As recent AOA V research has shown,⁶ not only do some explosive incidents go unreported, but injuries are also less likely to be reported than deaths. As such, the true figure of civilian casualties from explosive violence is likely to be even higher than the data from AOA V's Explosive Violence Monitor suggests. Reported casualties also rarely include invisible injuries, such as traumatic brain injury (TBI), despite its seriousness and prevalence.

Beyond the immediate impact of the blast there are, of course, other long-lasting health implications. The injuries caused by a blast, from damage to the victim's hearing or vision, to limb amputation and everything in between, will often need lifelong treatment and may lead to further health complications of their own. For example, an amputation may increase an individual's chance of developing arthritis.⁷ However, many of these reverberating health impacts remain under-examined or addressed, particularly in low and middle-income countries.

Some academic researchers and organisations have identified the common injuries associated with explosive weapons, such as Humanity and Inclusion⁸ and Save the Children.⁹ In 2019, for instance, Imperial College released a field manual to address paediatric blast injuries – highlighting how little understood and examined this tragic subsection of harm really is.¹⁰

One of the main concerns among health professionals is the lack of data and research on the lasting impact of blast injuries among civilian populations. Dr Ghassan Abu-Sitta, Head of Plastic and Reconstructive Surgery at the American University of Beirut Medical Center (AUBMC), told AOA V that relatively little is known about traumatic brain injuries from blast among civilian populations. Equally, data on war-wounded children treated in conflict zones is sparse.¹¹

Today, most data on the long-term health complications that arise from explosive weapon harm comes from the Veterans Affairs (VA) system in the US. But such data, whilst useful, has its limitations. It mostly focuses on previously fit, young, adult males who, from the moment of injury were triaged and managed through a highly-developed, well-funded medical system. Much of this knowledge, then, cannot be applied to civilian injuries that occur in under-resourced conflict environments. And it does not really help in understanding the impact of explosive violence on children, the elderly, those with underlying health conditions, or give a nuanced understanding of the gendered differences in health outcomes.

Dr Abu-Sitta also advocates for a more comprehensive view of war injury. "What we understand is that wars actually create an ecology", he told AOA V. "And that ecology of war traps people inside it; it

injures them in ways that we don't recognise immediately as war injuries but these are as a result. For example, a child who suffers a burn in a refugee camp that's a result of living in unsafe housing, not a war injury, but it is a consequence of the ecology that war itself has created."



Dr Ghassan Abu-Sitta is the Head of Plastic and Reconstructive Surgery and the co-director of the Conflict Medicine Program at the Global Health Institute at the American University of Beirut.

To address this, in this section, AOA V examines not only the direct physical impacts from explosive weapon use in Syria and Ukraine, but also looks at the indirect physical impacts the ecology of explosive violence in war creates.

DIRECT IMPACTS

Ukraine

AOA V recorded more than 2,600 civilian casualties from explosive weapons in eastern Ukraine between 2014 and 2019. Since 2014, over 1,000 civilians have been killed or injured by landmines and unexploded ordnance (UXO) in the region.¹² In total, over 3,000 civilians are thought to have been killed in the Donbas region alone.¹³ Another 30,000, both civilians and armed actors, have been wounded,¹⁴ including between 7,000 and 9,000 civilians. Of the civilian casualties AOA V has recorded in the country, at least 88% were due to ground-launched explosives, mostly shelling, and 6% were caused by landmines and IEDs.

The conflict in eastern Ukraine is one that revolves around a frontline and which is occurring in an area of the country. This means it is easier for civilians, especially those who are young and able-bodied, to seek refuge in another area. This, in part, has

resulted in fewer civilian casualties in the most recent years of the conflict.

In 2014, AOA V recorded 1,428 civilian deaths and injuries from explosive weapons in Ukraine and 862 the year after. The following years saw significant decreases. In 2019, AOA V recorded 61 civilian casualties. Though this doesn't include those from UXO, it is a significant indication of the fall in civilian casualties from explosive weapons.

Nevertheless, eastern Ukraine is one of the most mine-contaminated places in the world; today, two million people in eastern Ukraine remain at risk of death or injury from landmines and other explosive remnants of war.¹⁵ Such injuries require lifelong care.

Syria

In Syria, AOA V recorded more than 74,500 civilian casualties from explosive weapons between 2011 and 2019, including 32,000 deaths and 38,500 injuries. These figures strongly suggest that injuries are being significantly underreported.

A study of blast casualties in an Médecins Sans Frontières (MSF) hospital in Raqqa gives an idea of the most common injuries from explosive weapons.¹⁶ 42% of blast-related injuries involved predominantly soft tissue damage; 22% of cases involved open-fractures; 11% of patients had torso injuries and traumatic amputations, respectively. Other common injuries included closed fractures, cranial injuries, vascular injuries, eye injuries, spinal injuries, degloving, and burns. Most patients had *multiple* traumatic injuries.



A hospital in eastern Ukraine.



Eugeny Dubitsky was injured by shelling in 2017 in eastern Ukraine.

The MSF study examined patients both in the offensive and post-offensive period and, while the types of injuries were similar, the post-offensive patients saw higher rates of multiple traumatic injuries.¹⁷ Post-offensive patients also saw higher rates of infection – this could be due to the likelihood of explosives being among debris or in the ground, causing dirt and detritus to become embedded in the wounds. During the offensive, there were higher rates of surgical or anaesthetic complications.

The gender and age distribution changed significantly over time too, with far higher levels of males as a percentage of casualties in the post-offensive period than the offensive. This is likely to be an indication that initial returnees were often males, or that those among the returnees carrying out dangerous work, such as rubble clearance or explosive clearance, were males. In the offensive period, females accounted for 32% of patients and children for 42%.

Syria has been an exceptionally dangerous conflict for children due to the use of explosive weapons. A study carried out by Save the Children,¹⁸ published in 2019, found that 72% of child casualties in the five most deadly global conflicts were injuries caused by explosive weapons. In Syria, 83% of children physically harmed in the war were injured by explosive weapons.

A report by UNICEF in 2018 estimated that 1.5 million Syrians were living with permanent, war-related impairments. Of these, 86,000 people had received injuries that had resulted in amputations.¹⁹

Such injuries in Syria often require life-long expert health care. Unfortunately, not only do explosive weapons result in catastrophic injuries, they also decimate healthcare systems, meaning such support is often thin on the ground. Due to displacement and other conflict-related restrictions, many wounded may not receive adequate care. Even when they do,

poor living conditions mean the injured often have high rates of readmission from complications such as infection and disease. Dr Nada Awada, a Senior Medical Advisor at International Medical Corps (IMC) in Lebanon, told AOA that the poor quality of housing and living environments faced by Syrian refugees throughout Lebanon often led to post-surgery complications.²⁰

Some healthcare organisations try to take preventative steps when faced with such realities. The ICRC in Lebanon provides rehabilitation in their onsite facilities, so as to ensure individuals recover in a hygienic environment and thereby reducing the risk of infection. But such provision is limited – the post-surgery living conditions for many in the most impacted areas in Syria is dire and invariably leads to significantly worse long-term health outcomes.

Limited healthcare access also brings its own problems. In Syria and Lebanon, there is little in the way of antibiotic stewardship and many patients either self-administer or fail to take antibiotics correctly. 70% of Syrians are said to show multiple drug resistance to common antibiotics.²¹ In addition, antimicrobial resistance especially impacts those who have experienced blast injury. In Lebanon, this has led to a high prevalence of urinary tract infections (UTIs) among the refugee population.²²

INDIRECT IMPACTS

Ukraine

The use of explosive weapons causes other, indirect, physical health impacts. These can be a consequence of a shortage of medicines and healthcare staff; underlying health conditions not being diagnosed in the maelstrom of war; complications or advancing disease in people suffering existing health issues, such as missing cancer treatment or necessary operations; and a raft of other conditions brought on by those companions of conflict - depression, malnutrition and insecurity.

In Ukraine, more than 1.4 million civilians remain displaced.²³ Internal displacement and food shortages – largely a consequence of the shelling, UXO and other violence - contribute to health concerns. In this part of the world, the high percentage of elderly civilians and a relatively high proportion of people living with

disability in the conflict-affected areas, also exacerbates the impacts of war. The elderly are so omnipresent in the east of Ukraine that the conflict has been dubbed ‘the oldest war in the world’.

Donbas, for instance, had the highest rate of elderly in Ukraine even before the conflict began. About 30% of the 3.4 million people requiring humanitarian aid because of the violence in the region are of pension age - the highest rate of all global conflicts.²⁴ Today, between 50 and 70% of the population in Ukraine’s conflict-affected areas are elderly.²⁵ Furthermore, about 60% of pensioners in the non-government-controlled areas are not regularly receiving their pensions.²⁶ Elderly in the region have described how they have to choose between medicine and food, and half of people living with food insecurity in eastern Ukraine are thought to be elderly.²⁷ In addition, as many as 97% of older people are said to have at least one chronic condition, in a place where access to healthcare is limited.²⁸

About 30,000 people cross the contact line between the occupied and government territories every day – in blistering summer heat and in the desolate cold of winter.²⁹ Such journeys are a necessity for many elderly – they must make the journey so as to collect their pensions. The NGO Right to Protection has estimated that 48% of those crossing checkpoints were aged 60 and above.³⁰

As AOA has witnessed, the queues to the checkpoint are long and merciless: it can take hours for a 70 year old to make the journey.³¹ To avoid losing their place in the queue, many neither eat nor drink so they don’t need to use the toilet. There is a walk of up to 3km between checkpoints, and land on both sides is mined and is subjected to sporadic fighting and shelling. It is no wonder that some die in the crossing. The NGO Right to Protection recorded 35 deaths at checkpoints between January and September 2019 alone; almost all were elderly and most died of heart-related complications.³² When AOA meet with the team at the Mayorsk checkpoint, in the space of half an hour, the team was mobilised twice; once to respond to a woman who had fainted and the other to help reduce a man’s elevated heart rate.

Beyond checkpoints, an endemic lack of supplies and access to healthcare is thought to have contributed to

higher infection rates of HIV and tuberculosis³³ – ones that have sharply risen since 2014.³⁴ Rates of tuberculosis, for instance, are reported to have increased by 54% in Donetsk in recent years. Soldiers, too, bring sexually transmitted diseases with them, all too often.³⁵

While rises in some diseases and illnesses are related to the lack of healthcare due to the ongoing fighting, others are related to the stress caused by shelling and violence.³⁶ When AOAV visited the main hospital in Popasna, a city in the Luhansk Oblast (region) of Ukraine, the director described seeing ten times the number of diabetes-related amputations than pre-war levels.³⁷ Other spikes in illnesses included cardio-vascular diseases and diabetes, confirming the findings of other studies.

Dr Alexandr Vladimirovych Kovalchuk said these spikes were caused by the stress of the conflict along with “a lack of medical monitoring of displaced peoples; patients presenting with more advance diseases; a rise in people presenting with endocrine issues; a rise in oncological diseases; poor nutrition; poor quality drinking water; a lack of employment opportunities; alcoholism; a lack of secure accommodation.”

Other doctors at Popasna highlighted a significant issue seen across all conflict zones: many conditions would have been caught much earlier in a peaceful region.

Such health consequences, as well as the damage to health infrastructure and a reduction in healthcare access, influenced mortality rates in the most impacted regions. In a report undertaken by the Deputy Chief of



People queue at the Mayorsk border-crossing.

Healthcare Statistics in the Donbas region, it was found that, by 2016, the mortality rates in the Donetsk region had far outstripped the birth rate.³⁸ The birth-rate was at 7.05 per 1,000, while mortality rates stood at 16.4 per 1,000. Those areas with the highest birth-death rate disparity had also been witness to the fiercest fighting.

Syria

Those living in impacted areas, as well as the displaced, often find themselves living in conditions so bad that poor health outcomes become a terrible certainty. Health professionals that AOAV met in Lebanon, said living conditions were one of the primary causes of illness and injury among Syrian refugees in the country. Alongside considerable food insecurity, communities also saw a rise in unhealthy eating habits, as families fell back on cheap, highly processed foods. There was a notable and widespread lack of nutritional food available, and poor conditions to prepare healthy, wholesome meals.³⁹ Additionally, due to the growing economic insecurity in Lebanon, the money families have to spend on food is shrinking. Limited funds mean, for many, prioritising food over hygiene items too, increasing the risk of illness.

Certainly, life there is terrible for so many refugees. AOAV met residents at one informal camp where the tents stood next to a large, filthy pool of stagnant water. Sometimes it flooded their camps, washing rubbish and human waste through their spartan homes. Biting insects and bedbugs were aplenty. Colds and flus spread through the camps like wildfire, too. And, in a time of COVID-19, such unhygienic and grim conditions offer a terrible breeding ground for infection.



At the Mayorsk border-crossing.



Things have improved – the borders once lacked toilets, running water, shade or shelter.

The extent of such harm is hard to quantify. Already in Lebanon, Iraq and Syria, the numbers of COVID-19 cases are believed to far exceed official figures.⁴⁰ The spread of the virus in Syria seems impossible to control. In Idlib, for example, camps already stand at 400% overcapacity.⁴¹ Spare hospital beds or ventilators are a luxury rarely seen.

Other health threats and dangers persist. Previous research by AOAV on the reverberating harm from explosive weapons in Syria found links between this violence and rises in waterborne diseases and respiratory illnesses, as well as a sharp drop in immunisations for children.⁴²

In Syria, in particular, there has also been a concerted effort to disrupt food supplies through the use of explosive weapons, whether through damaging agricultural infrastructure or breaking supply routes and targeting markets.⁴³ AOAV has recorded more than 100 incidents of explosive violence on markets in Syria – a figure that doesn't even include bombardments that hit multiple sites including markets.

Two-and-a-half million people, or 10% of the pre-war Syrian population, have been victims of sieges.⁴⁴ As a consequence, near-famine conditions have been widespread since the outbreak of conflict.⁴⁵ In December 2017, UNICEF reported that 11.9% of children in Eastern Ghouta were suffering from acute malnutrition.⁴⁶ This tactic of starvation continued unabated in Idlib throughout 2019 and 2020. In July and October 2019, the UK's Channel 4 News published two reports; the



Operating theatre at a hospital in eastern Ukraine.

first focused on children scavenging through rubbish for food in Idlib,⁴⁷ the second examined the strategic bombardment and burning of farmland by the Syrian army to starve opposition and the populations in these areas into submission.⁴⁸

In 2020, food insecurity in Syria remains at critical levels, a reality compounded by the total collapse of the Syrian currency and by ongoing sanctions imposed by foreign powers. According to the International Rescue Committee, the recent Idlib offensive triggered “the largest displacement in the country's nine-year-old war”, with one million people estimated to have been displaced.⁴⁹ In one week of early February 2020 alone, dozens of children perished due to the terrible conditions within the displacement camps, a death toll exacerbated by the lack of access to food and medicine.⁵⁰

Syria Relief and Development, a charity supporting Idlib's internally displaced persons (IDPs), have warned that famine on the scale of the one in Yemen could hit northwest Syria.⁵¹ Such levels of malnutrition may have a severe impact on future Syrian generations.

It is clear, then, that explosive weapons not only cause lasting direct health problems. The indirect impact can be just as lasting and damaging to the health of local populations as well as those internally displaced and forced to become refugees. Much of this lasting harm depends on the local ability to access healthcare, including the capacity of local infrastructure and personnel to provide healthcare. To such concerns we turn next.

PSYCHOLOGICAL HEALTH IMPACTS OF EXPLOSIVE WEAPONS

- In the conflict-affected areas of Ukraine, 40% are said to have experienced trauma resulting in stress, depression, anxiety, and post-traumatic stress disorder.
- A Humanity and Inclusion study found that 80% of people injured by explosive weapons in Syria expressed signs of high psychological distress.
- Among Ukraine’s IDPs 20% are thought to suffer from moderately severe to severe anxiety, compared to 12% of Ukraine’s general population.
- Among Lebanon’s Syrian refugees, it was reported that in many cases the psychological impacts often stem more from the reverberating consequences of explosive violence, such as displacement and poor living conditions.

The psychological impact of conflict has increasingly been the subject of research in recent years, including a focus on the mental effects of exposure to explosive weapon harm. AOA’s research into the psychological harm of explosive violence found depression was particularly a lasting consequence, often having impact for generations, even impacting the children of survivors.⁵²

The longevity of such harm is also highly affected by the availability of psychological support, the living conditions of those impacted, as well as the dominant narrative of the violence in the post-conflict period.

This section discusses some of the lasting direct and indirect psychological impacts from the use of explosive weapons in Syria and Ukraine.

DIRECT IMPACTS

Ukraine

In the conflict-affected areas of Ukraine, 40% of civilians were reported to have experienced trauma resulting in stress, depression, anxiety, and post-traumatic stress disorder (PTSD).⁵³ However, it has also been reported that there has been an over-diagnosis of PTSD there owing to a lack of mental health services. One psychologist working for Caritas, for instance, said that, at one stage, virtually anyone who experienced the war was diagnosed with PTSD.⁵⁴

While things have improved since the height of the fighting, Ukrainian families still live with daily anxiety owing to the dangers the conflict continues to pose. The ongoing prevalence of shelling, landmines, IEDs and UXO means that psychological support still remains one of the most requested forms of health assistance in the conflict-affected areas⁵⁵

Such demand is problematic. There is a general lack of expertise in Ukraine in terms of addressing mental health issues.⁵⁶ For instance, it was reported in a 2019 Humanitarian Response Plan,⁵⁷ that 75% of Ukrainian families in the government-controlled areas living close to the contact line complained of a lack of psychological support or said they did not know where to access such support – though these issues are a salient feature of most global conflict hotspots.

When AOA met Dr Yuriy Smal, head of the psychiatric hospital in Semenivka, in the Poltava Oblast of Ukraine, he described the impact the conflict had had in terms of common mental health complaints.⁵⁸ Before the war, his patients had what you might expect to see in any large psychiatric unit: mood disorders (such as depression or bipolar disorder); anxiety disorders; personality disorders; psychotic disorders (such as schizophrenia); eating disorders; and substance abuse disorders. During and since the war, though, a large portion of his work involves treating those with trauma-related disorders, especially post-traumatic stress (PTSD). While he has not researched the prevalence of PTSD in his region, such a shift in focus comes as little surprise.

While his hospital has received specific government and overseas funding for repairs and construction, his

overall budgets have not increased to cater for those impacted by the war. 23 psychiatrists in Dr Yuriy Smal’s team did receive further training in identifying and treating PTSD, up to what he described as ‘European standards.’ He claimed that this changed his staff’s curative approach, away from a pharmacological-centric approach to a psychotherapeutic and social rehabilitative approach.

One thing of note in many health centres in Ukraine was that the war has helped raise awareness of mental health issues and has, in certain cases, led to a change in treatment approaches and regimes, as Ukraine seeks to align itself much more with European standards and practise.

Syria

Among Syrians, including local populations, the displaced and refugees, there is a high prevalence of mental health concerns. A report by the German Federal Chamber of Psychotherapists found that around 50% of Syrian refugees living in Germany had mental health problems.⁵⁹ The IMC, also found that among the Internally Displaced Peoples (IDPs) and refugees using their facilities, over 50% had emotional disorders and over 25% of children had intellectual and developmental issues.⁶⁰

And though these figures relate to those fleeing the conflict in general, explosive weapons are one of the most significant contributors to psychological health impacts. As AOA’s own research has shown, 85% of refugees in Europe are fleeing explosive violence.⁶¹

The deafening noise of explosive weapons and the witnessing of its surreal impact – bombs crumpling buildings and concertinaing familiar horizons – are clearly significant psychological stressors. It has been argued that continuous exposure to such visual and auditory horrors can have “the same negative outcomes as major traumatic events”.⁶² A Save the Children study examined the psychological effects of the conflict on children and found that, among Syrians interviewed, “84% of adults and almost all children said that ongoing bombing and shelling is the number one cause of psychological stress in children’s daily lives”.⁶³

For those *injured* by explosive weapons there is an even greater psychological toll. A Humanity and Inclusion study revealed 80% of people injured by explosive weapons expressed signs of high psychological distress.⁶⁴ Furthermore, of those injured, 66% were unable to carry out essential daily activities due to their feelings of fear, anger, fatigue, disinterest and hopelessness.



A refugee camp in Aarsal.

It is also worth highlighting that before the conflict in Syria there were few health facilities dedicated to patients with mental disorders. It went from few to virtually none. Within two years of the conflict, there were only three public mental health facilities in Syria left functioning.⁶⁵ Between late December 2012 and early January 2013, one of these facilities, the Ibn Khaldun Psychiatric Hospital, suffered severe shelling and bombardment, forcing patients and doctors to leave.⁶⁶ Two patients were killed by snipers as they fled.

INDIRECT IMPACTS

Ukraine

Among Ukraine's IDPs, 20% are thought to suffer from moderately severe to severe anxiety, compared to 12% of Ukraine's general population.⁶⁷ While 25% of IDPs suffer from moderately severe to severe depression, compared with 15% of the general population. Only 23% of IDPs suffering anxiety or depression have received professional help. For those that did receive help, most only had the benefit of a one-time consultation.

While most IDPs identified positive coping mechanisms for dealing with anxiety and depression, such as talking with friends or going for a walk, 16.7% identified alcohol and smoking as a way in which to cope. Such coping mechanisms appear to vary somewhat between the sexes.⁶⁸ Women were more likely to turn to religion and to self-prescribe medication, while men were more likely to turn to exercise, alcohol or smoking. There were also differences based on age – the elderly were more likely to turn to religion or gardening than younger generations; younger groups more likely to turn to exercise than the elderly.

Those that continue to live in the conflict-affected areas are also impacted by the isolation. In many abandoned villages, the elderly remain unable or unwilling to leave their homes.⁶⁹ In many cases, children and grandchildren have fled to other areas and so the parents or grandparents who stay behind are left abandoned and lonely. According to the Food and Agriculture Organisation of the United Nations, a third of households have members who have migrated.⁷⁰ The elderly are also reported to be the least likely to feel hopeful.⁷¹

Gender differences in coping mechanisms should be of concern, not least because of the high prevalence

of male suicide in Ukraine;⁷² Ukraine has the seventh-highest suicide rate in the world for men compared to the 81st highest for women. Alcoholism is another concern among men.

In a separate and recent study of mental health among IDPs, 32% were found to have symptoms of PTSD, while those with depression and anxiety saw similar scores to the study above (22% and 18% respectively).⁷³

The challenges for many IDPs facing mental health difficulties are made worse by the prevalence of physical health challenges amongst that community. One report highlighted that about half of IDPs reported mobility difficulties, compared to 7.5% of non-IDPs interviewed, while the likelihood of blindness/poor vision and hearing loss was also more likely among IDPs.⁷⁴ Blindness or poor vision among IDPs stood at 7.4%, compared to 6.9 for non-IDPs and hearing loss was 6.1% for IDPs, compared to 2.2% amongst the control group. Such difficulties can not only intensify isolation and mental health issues but also increase the barriers to those seeking support. It should be noted that the study also found that IDPs were more likely to seek and access support compared to the general population but this usually only occurred once without follow-up. About a quarter of respondents were offered mental health support when they left the conflict-affected areas; only 10% received help.

Improving and making more affordable the living conditions for IDPs was identified as one of the main ways in which their mental health could be improved. Other popular suggestions included: low-cost mental health support which is easy to access; greater awareness around mental health; and IDP support groups and activities. Many professionals recognise that the problems that IDPs face require a multidisciplinary approach to address concerns such as housing and employment as well as trauma, as the everyday burdens of just living as a displaced person intensify mental health impacts.⁷⁵

Syria

According to Dr Leyla Akoury-Dirani, Associate Professor of Psychiatry at AUBMC in Lebanon, from her experience with Syrian refugees, often



Dr Yuriy Smal is the head of a major psychiatric centre that was bombed in the war.

the psychological impacts stem more from the *consequences* of explosive violence, such as displacement and the living conditions associated with being a refugee in Lebanon, than the trauma of the impact itself.⁷⁶ Dr Akoury-Dirani highlighted the complexities of addressing psychological health among refugees, many of whom are still in 'survival mode', and are therefore unable or not ready to address the trauma they experienced.

In Lebanon, where healthcare is usually expensive and where there are few psychiatrists in any case, there is a clear unmet need. Dr Akoury-Dirani explained to AOAV researchers that there are just 50 psychiatrists throughout Lebanon, including three child psychiatrists; about two-thirds of these psychiatrists reside in the capital city, Beirut.⁷⁷ These psychiatrists struggle to address the needs of Lebanon's own war-affected population – Dr Akoury-Dirani currently has a three-month waiting list. And many more cannot access care due to the costs and the stigma which remains associated with mental health. Few Syrian refugees could access such services.

AOAV spoke to the son of a Syrian refugee who had tried to commit suicide. His father, who suffers from diabetes, cancer and depression, is unable to afford the treatment for any of his conditions. His family had been scraping together enough to provide his diabetes medication but he felt like a burden and so tried to overdose. Fortunately, the attempt did not work but he is described as remaining catatonic.



Dr Leyla Akoury-Dirani, Associate Professor of Psychiatry, AUBMC.

The head of a refugee camp in Aarsal said that many at the camp suffered psychologically but there was a considerable stigma and no help available. There had been other suicide attempts inside the camp. The camp head believed that almost everyone in the camp suffered from depression and echoed the statement of health professionals when he identified their current living situation in the camps, not just the trauma experienced in Syria, as a primary cause of the depression. Many, he believed, also suffer psychosomatic and other stress-related illnesses.

In one camp, it was reported that a Lebanese therapist used to visit to try to provide relief, but it was stated it became too much and they had a breakdown as they encountered "too much misery". This case was confirmed by local NGOs.

In both Syria and Ukraine, explosive violence will leave lasting psychological harm. While there has been a growing awareness of the psychological harm from conflict, it is still one of the impacts least addressed.

Addressing the psychological harm of explosive weapons is complex, especially as many of those impacted remain in unstable circumstances for many years after their experience of explosive violence. While there is awareness of the stigma still associated with mental health across the globe, far more needs to be done to overcome these obstacles and to ensure mental health support reaches all civilians impacted by armed violence.

INFRASTRUCTURE AND PERSONNEL HEALTH IMPACTS OF EXPLOSIVE WEAPONS

- Between 2011 and 2019, AOA V recorded 3,447 civilian casualties from the use of explosive weapons in 221 attacks on hospitals. Such attacks were recorded in 23 countries from Afghanistan to Ukraine to Peru.
- In 2018 alone, the Safeguarding Health in Conflict Coalition documented that there had been a total of 973 attacks on healthcare professionals.
- Of 600 primary health care facilities in Luhansk and Donetsk oblasts, over 35% of them have sustained damage.
- In Ukraine, the most significant decreases in the number of full-time doctor positions between 2012 and 2016 were observed in territories that witnessed the fiercest fighting, namely: Avdiivka (a 23% decrease); Mariinka (15%); and Yasynuvata (14%).
- Physicians for Human Rights estimate that, by March 2020, at least 923 medical professionals had been killed in the conflict in Syria.

Increasingly, hospitals and other medical infrastructure have become the target of air and ground campaigns across conflict zones. Between 2011 and 2019, AOA V recorded 3,447 civilian casualties from the use of explosive weapons in 221 attacks on hospitals. Such attacks were recorded in 23 countries from Afghanistan to Ukraine to Peru. Further casualties have been recorded in attacks that hit both hospitals and other

surrounding infrastructure such as homes or markets. Health personnel have also been killed or injured in explosive incidents, targeted and random, outside of medical facilities.

So problematic is this that, in June 2019, medics in Syria's Idlib region stopped sharing the coordinates of health facilities to the UN to prevent targeting, as the health facilities whose location had previously been shared with the UN had come under attack.⁷⁸ The targeting of operational hospitals is a breach of International Humanitarian Law.

Such targeting is not without precedent. In the Sri Lankan civil war, a conflict that lasted from July 1983 through to May 2009, hospitals in rebel areas also stopped providing coordinates after being targeted.⁷⁹ Despite such efforts, by the last few months of the conflict it was reported that shelling between the government forces and the Tamil Tigers had destroyed the last functioning hospital in the north.⁸⁰

In recent years, the targeting of hospitals has reportedly become 'the new normal'.⁸¹ This is devastating to civilian populations, both physically and psychologically, preventing access to treatment for thousands.⁸² When the MSF hospital in Saada, Yemen, was hit in an airstrike in October 2015, it was reported that up to 200,000 people lost access to medical care.⁸³

Personnel are also frequently targeted. In 2018, the Safeguarding Health in Conflict Coalition documented 973 attacks on healthcare professionals and facilities in 23 countries experiencing conflict.⁸⁴ 272 attacks included the use of explosive weapons: 27% with surface-launched explosives; 55% with aerial bombs; and 10% with IEDs.

Infrastructure damage and the loss of personnel have devastated the healthcare systems in both Syria and Ukraine.

INFRASTRUCTURE Ukraine

AOA V has recorded nine incidents of explosive violence on hospitals which resulted in reported deaths and injuries; 39 civilian casualties were reported. This is just as reported on English language media – more



Patients at Avdiivka's main hospital in Eastern Ukraine.

hospitals were damaged or destroyed. Of 600 primary health care facilities in Luhansk and Donetsk oblasts, 35% of them sustained damage.⁸⁵ More are in disrepair due to a lack of maintenance and upkeep.

Of the damaged hospitals and clinics in the region, most are located near the contact line, with the majority lying near Donetsk.⁸⁶ Most of the damage occurred in 2014 and early 2015. There were 107 incidents of shelling on hospitals in Donbas: 73% occurred in the 12 months between April 2014 and March 2015. The World Health Organisation (WHO) reported that 150 of the 342 healthcare facilities in the conflict zone had been shelled by December 2016.⁸⁷

When AOA V visited Sloviansk, the bombed-out psychiatric hospital was a stark reminder of the conflict's toll. Dr Yuriy Smal, the head-doctor of this facility for 30 years, once ran a centre with 450 beds, 48 doctors and 180 nurses – some 480 staff in total. It was the biggest psychiatric hospital in the region. Today, he has taken over a smaller building in the nearby city of Semenivka. And while he retained his staffing levels, the number of his patients has dropped – today he only has space for 275 beds. Some of the damaged buildings have been renovated, but three had to be demolished and the remainder are still under repair.

Admittedly, some hospitals have been quickly rebuilt, and offer better facilities than before. Funding from regional and central government, as well as donations from the Swiss, Norwegians, French and Germans, has transformed the main hospital in Popasna.⁸⁸ It is able to now cater to a population of over 77,000, comprised



An operating theatre at Avdiivka's main hospital in Eastern Ukraine.

of locals and IDPs. Without such funding the hospital would have been dragged into despair, and the population left without quality care.

Syria

AOA V has recorded 1,388 civilian casualties from 92 incidents of explosive violence on hospitals in Syria, not including incidents that hit multiple locations.

In 2018 alone, Syrian health workers, facilities and transport faced 257 attacks (data is available for 253 of these cases). Of this number, 208 attacks utilised explosive weapons, including 132 aerial bombs, 46 surface-launched explosives and in several cases hand grenades and landmines.

It is not only stationary healthcare facilities that have been the direct targets of violent attacks. Ambulances have been repeatedly bombed, shot at, stolen, looted and obstructed as part of the war strategy, with 204 individual attacks involving 243 ambulances occurring in Syria between 2016 and 2017.⁸⁹

In 40% of such attacks, ambulances have been rendered entirely inoperative.⁹⁰ One of the tactics used to achieve such outcomes has become known as 'double-tap attacks', whereby one attack is followed by another in the same area.⁹¹ The most common form of attacks on ambulances in 2017 was air-to-surface missiles (making up 53% of ambulance attack) and shelling (making up 31% of ambulance attacks). The use of cluster bombs, barrel bombs and IEDs have also been routinely used, accounting for 13% of ambulance attacks in 2016. Attacks on

ambulances increasingly impeded the healthcare system, significantly restricting the ability to safely evacuate the wounded and provide medical aid.⁹²

At points in the conflict, as mentioned, some actors and organisations in Syria stopped providing the coordinates of the healthcare centres under their control, as it was felt that such coordinate sharing led to hospitals being targeted. MSF stopped providing the coordinates of their healthcare centres in rebel-held areas by early 2016. Such seemingly targeted attacks on healthcare have continued throughout the conflict. Hospitals in Idlib decided not to share coordinates in 2019.⁹³

Despite these efforts, by February 2020, Physicians for Human Rights had recorded 595 attacks on at least 350 separate medical facilities.⁹⁴ In total, it was reported in 2020 that “only 64% of hospitals and 52% of primary healthcare centres across Syria were fully functional at the end of last year”.⁹⁵

PERSONNEL
Ukraine

In Ukraine, it is thought that over 1,500 healthcare professionals have left the conflict-affected areas since 2014.⁹⁶ In Donetsk, some estimates suggest that as many as 40% of doctors left.⁹⁷

The low numbers of psychologists and other mental health workers and the escalating scale of need has also meant that many have experienced professional burnout. One psychologist reported losing their health

and even their ability to walk for two years.⁹⁸ Many now only want to work for a decent salary with suitable, fixed working hours – in other words, outside the afflicted areas or even overseas.

A report undertaken by the Deputy Chief of Healthcare Statistics in Donbas found that the number of full-time staff positions of doctors in the Donetsk region between 2012 and 2016 decreased by 7.2%.⁹⁹ The most significant decreases were observed in territories that witnessed the fiercest fighting, namely: Avdiivka (23% decrease); Mariinka (15%); and Yasynuvata (14%).

The number of doctors per 10,000 in the Donetsk region fell by 8.8. There was also a decline in doctors with specialisms, especially amongst paediatric surgeons. Furthermore, as of 2016, there were no pulmonologists, urologists, or neurosurgeons with a paediatric specialism across the entire region at all, with but a few specialists in paediatric haematology and gastroenterology.

The report also found that the provision of beds also decreased by 14%. At the same time, many specialist wards were closed down. The most significant decrease in the provision of beds was that of specialist beds for children. These reductions, in both medical specialism and beds available, may have fuelled the rise in the region’s hospital mortality rates, which increased 10.5% between 2012 and 2016.

Syria

Physicians for Human Rights estimated that at least

923 medical professionals had been killed in the conflict by March 2020.¹⁰⁰ Of the health workers killed, it is estimated that shelling and bombing accounted for 55% of deaths.¹⁰¹ 88 individual health workers were killed in Syria in 2018 alone,¹⁰² with a further 75 injured. 73 of these deaths were caused by explosive weapons, 45 of which were aerial bombs. Up to 70% of healthcare workers are said to have fled the country.¹⁰³

There are also indirect impacts from the use of explosive weapons on health personnel. For example, in Lebanon, the surge in demand for services from the millions of Syrians who sought refuge in Lebanon was not met with increased human resources in Lebanese health centres. According to interviews with health professionals in Lebanon and international organisations, Lebanese healthcare professionals reported being overwhelmed and experiencing reduced satisfaction with their occupations, with significant rises in stress.¹⁰⁴ This contributed to issues with staff retention and recruitment. Such impacts on staff influence the level and quality of patient care, for both Syrians and Lebanese.

A key complaint among refugees interviewed by AOA in Lebanon was that they felt like they were discriminated against when trying to access healthcare, while others reported mistreatment at hospitals. One refugee told AOA that during their experience of accessing healthcare treatment in Lebanon, they were ‘made to feel worthless’. Of the refugees surveyed by AOA in Lebanon, 81% were unsatisfied with the healthcare they received. The reduced health professional to

patient ratio would undoubtedly result in such consequences, causing frustration for both patients and professionals.

A veterinary surgeon in a camp in Lebanon’s Aarsal region explained that many come to him for advice as they cannot afford to seek healthcare. As Syrian health professionals are not allowed to work in healthcare in Lebanon for the most part, many provide informal care. Dr Gladys Honein, Assistant Professor at AUB- Hariri School of Nursing, highlighted that while this filled a gap in healthcare provision, the Syrians providing such care, did so at considerable risk to themselves, given that it was illegal. Though such care enables many of those who cannot access healthcare formally to not go entirely without, far more must be done to ensure adequate care provisions for all. Currently in Lebanon, many refugees rely almost entirely on local NGOs to ensure access to healthcare.

AOAV’s research in post-conflict areas found that while damage to health infrastructure was often repaired within a matter of years, the loss of health personnel can persist for decades; with many professionals remaining in the countries or areas where they had sought refuge during the conflict. In addition, impacted countries all too often fail to retain promising young health professionals in post-conflict environments, and training for such individuals is often sparse. Given this, it is likely that the damage to infrastructure and the loss of personnel will continue to impact the healthcare provided to civilians in eastern Ukraine and Syria for many years to come.



The hospital’s Deputy Director with three of the hospital’s doctors at Avdiivka’s main hospital in Eastern Ukraine.



Dr Vitaliy Danylovych Sytnik, Deputy Director of Avdiivka’s main hospital.



Living conditions for Bekaa Valley’s refugees.

ACCESS TO HEALTHCARE AND THE IMPACT OF EXPLOSIVE WEAPONS

- Among families within 20km of the contact line in eastern Ukraine, 40% face significant challenges accessing healthcare services.
- In one survey of IDPs in Ukraine, those who had paid for care in the 12-months prior to the questionnaire had an average bill of \$107.
- Of 120 Syrian refugees AOA V surveyed across Lebanon, 86% of those who answered had not been offered psychological support.
- Of the 3,000 rescue workers that volunteer for the Syrian Civil Defense (the White Helmets) less than 5% are women – this often inhibits the rescue of women after incidents of explosive violence.

An ability to access healthcare is determined by many variables. These include aspects already discussed in this report - such as infrastructure and personnel – but also include factors such as the quality of the roads and the presence of unexploded ordnance making reaching facilities unsafe. Other hidden or unconsidered considerations include the costs of getting to hospital by displaced families often living below the poverty line and access to reliable and safe transport, especially for women and children.

Research into explosive weapons and access to healthcare by AOA V has already established that access to treatment for injuries from explosive weapons is likely to be gendered.¹⁰⁵ Of 2,741 civilians treated at Camp Bastion in Helmand, Afghanistan, for instance, less than 1% were female. It was found that women are frequently less able to access treatment due to cultural and religious inhibitory factors, ones often exacerbated by conflict. For example in some cases, women may

not be rescued from the rubble until family members or other women can do so, due to the concern that body parts or hair may be exposed. Though, in areas where these norms occur, women are also less likely to have roles in healthcare or be first responders. For example, of the 3,000 rescue workers that volunteer for the Syrian Civil Defense, the White Helmets, less than 5% have been women.¹⁰⁶ This is despite the fact that the addition of female volunteers is said to have a significant impact on ensuring injured females receive treatment. Other reasons for the reduced access to medical care, include the need to wait for family to accompany them to hospital, or a lack of female health professionals.

In this section, AOA V examines some of the key barriers to accessing healthcare due to the use of explosive violence in Syria and Ukraine.

Ukraine

In August 2019, it was reported that more than half of families living near the ‘contact line’ could not access healthcare. As you get closer to the contact line, the less access to healthcare there is. Among families within 20km of the contact line, 40% face significant challenges accessing healthcare services.¹⁰⁷ Within 5km, this rises to 57% of families without access. Humanitarian aid also struggles to reach these areas. There are many physical barriers to access for the settlements closest to the contact line, such as damaged roads, the presence of mines, and the continued threat of shelling.¹⁰⁸ These barriers can also prevent ambulances reaching these areas.

As there is a shortage of medical supplies and equipment across the conflict-affected areas, costs for medical care continue to rise.¹⁰⁹ In August 2019, OCHA reported on shortages of medication for diabetes, cardiovascular conditions, cancer, and other non-communicable diseases.

Shelling and landmines have isolated some 70,000 people living in about 60 communities in areas close to the contact line. Half of them are elderly. 35% have a disability and/or a chronic illness.

In Avdiivka for example, just north from the city of Donetsk, there is no specialised medical infrastructure



Syrian refugee camp in Arsal, Lebanon.

at all.¹¹⁰ Before the conflict it was unnecessary for such services, as the city was so close to Donetsk, a 15-minute drive away. The border between the two towns, however, has meant that – today – the closest hospital with maternity services lies 50 miles away. Even the main road cannot be used out of the town, with locals taking a rough, mud road instead. The maternity ward in Avdiivka was closed in March 2019 due to a lack of specialist care and employees, which was thought to have resulted in a mother and baby dying during childbirth.¹¹¹

Those that need to access specialised services often have to choose between travel costs or things like essential repairs to homes or even food. For victims of explosive violence, there are additional challenges in terms of prioritising healthcare, largely around the widespread lack of public understanding of the need for continuing care post-blast.¹¹² The Protection Cluster in Ukraine, for instance, has to highlight the need for survivors accessing rehabilitation, functional prosthetics and psychosocial support to raise public awareness of such needs.

Though IDPs are meant to be able to access free healthcare this is not, in practice, the case: many have to pay formal and informal payments for healthcare and medicine.¹¹³ One study found that all of Ukraine’s war-injured relied on treatment paid for by charitable foundations and international organisations. With the average income in Ukraine still less than 40% of its pre-conflict level, people struggle to pay for care.¹¹⁴

In August 2019, it was reported that the Ukraine Humanitarian Fund was expected to distribute US\$3.2 million to address these challenges of accessing healthcare, including mobile clinic services.¹¹⁵ It is hoped this will target the 1.3 million people in need of access to healthcare in the east. The amount of money, however, seems small in regard to the challenge faced.¹¹⁶

While self-diagnosis of mental health issues was an issue before the conflict, a lack of healthcare access has exacerbated this. In one study of mental health among IDPs, of the 703 respondents who had experienced a mental or emotional problem in the

12-months prior to the survey, just a quarter had been able to seek some kind of care¹¹⁷ More common was accessing care or support at a pharmacy, with 48% doing this. Other ways of accessing care or support included: family or district doctor/paramedic (38%); internist at a polyclinic (33%); internist/neurologist at a general hospital (31%); psychologists visiting communities (27%); and NGO/volunteer mental health/psychosocial centre (21%). The most common type of care provided was medication.

Of those who had not sought care, the main reasons given were: a belief they could self-prescribe medications (34%), they could not afford to pay for the medication (27%) or health services (23%); they were not aware of where they could find help (23%); a poor understanding by health care providers (24%); poor quality of services (15%); and stigma/embarrassment (8%).¹¹⁸



A healthcare worker in Aarsal.

For those who had paid for care in the 12-months prior to the questionnaire, their bill came to an average of \$107.¹¹⁹ For those who had paid for medicines, it was an average of \$109 for the medicines. The average monthly wage in Ukraine at that time was \$193 – though this is likely to be significantly lower in the conflict-affected areas and for IDPs – especially among the elderly. This gap in mental health support in Ukraine is being exploited by those offering unqualified assistance for money.¹²⁰ The lack of quality care can intensify trauma and can re-traumatise individuals using these services.

Another barrier to healthcare in Ukraine is the stigma still attached to mental health and mental health support.¹²¹ Archaic images of mental health support as being inpatient care in Soviet-era asylums are pervasive but inaccurate. This leads to funding constraints as even government officials are influenced by these misconceptions.

The quality of psychological care in Ukraine has always been mixed, a situation fuelled by a lack of professional education, expensive training and non-compliance to certain standards and ethical norms. And such an absence of quality care is made increasingly apparent by the heightened need of IDPs.¹²²

Syria

Explosive violence has devastated healthcare in Syria in a variety of ways. While, of course, the destruction of healthcare systems in Syria has severely limited access, other factors have also played their part. With more than 80% of the population living below the poverty line, the WHO has asserted that many cannot afford even the fees of transportation to hospitals.¹²³ Damaged roads, alongside continuing conflict and insecurity, can further prevent civilians from reaching healthcare facilities.¹²⁴

Such access is crucial. With many blast injuries, patients require multiple surgeries, often long after the event. Of those seeking surgeries from the ICRC in Lebanon, following blast injuries that incurred in Syria, most were 'cold surgeries'. This refers to scenarios where the injured had received treatment in a Syrian field hospital but due to inadequate healthcare caused by the conflict, further trauma, or lack of rehabilitation, they required further surgery. Most of



Eugeny Dubitsky was injured by shelling in 2017 in eastern Ukraine.

the current surgery on blast injuries by the ICRC in Lebanon is now, therefore, corrective.¹²⁵ This exemplifies the poor levels of healthcare available in areas of Syria experiencing explosive violence.

Refugee populations also face difficulties accessing healthcare, particularly in those states neighbouring Syria. In Lebanon, for example, many refugees cannot access healthcare due to the costs and distance from healthcare centres.¹²⁶

Doctor's appointments cost between 8,000 and 16,000 LBP, or about \$4-9, a price that is still difficult for refugees to afford,¹²⁷ bearing in mind that 70% of Syrian refugees live below the poverty line.¹²⁸ The 2017 Vulnerability Assessment Report conducted by UNHCR, Unicef and the World Food Programme (WFP) found that the main reasons that households did not receive required care were because of the cost of drugs (33%), consultation fees (33%), uncertainty about where to go (17%), and not being accepted at the facility (14%).¹²⁹

There have even been reports of some people travelling back to Syria to receive treatment, due to the high costs of medical care in Lebanon.¹³⁰ Because, whilst the UNHCR covers 85% of primary healthcare costs for refugees in an attempt to expand accessibility, this does not go far enough to relieve the financial burden or to address transportation difficulties.¹³¹

The data available from the UNHCR also doesn't appear to accurately reflect the situation on the ground.



Elderly man in camp in Lebanon's Bekaa Valley.

While a survey conducted by UNHCR, Unicef and WFP found that many refugees that required *primary health care services* were able to access them (89%), the survey only reached households with a landline, only surveyed registered refugees, and relied on partner healthcare providing organisations to carry out fieldwork.¹³² Therefore, it is likely that less vulnerable refugees were surveyed. For example, 591 cases were removed from the random sample due to safety or security concerns – the same safety and security concerns that may prevent these refugees from accessing healthcare in the first place.

Instead, media reporting suggests a far greater number than 11% cannot access healthcare. Additionally, when AOA conducted fieldwork in Lebanon, many refugees we spoke to said they were unregistered, decreasing healthcare access further.

One NGO that AOA met in Lebanon, Endless Medical Advantage (EMA), had recently dealt with a case of a young girl of about 18 months, with severe burns over her body as a result of an accident in her tent – a situation which occurs all too commonly in camps. The girl was rushed to a local hospital who bandaged her but provided no further treatment as the family could not pay. Under the direction of EMA, the family took her to another hospital, but they refused to treat her as they didn't have a specialised burns unit. After calling around, another hospital in Beirut said they would take her. The family drove two hours through the night to go to the hospital and when they arrived the hospital stated they would require \$10,000 to admit her, which

the family could not afford.¹³³ Endless Medical Advantage and other NGOs started calling MPs and alerting media to highlight the case, and eventually another hospital said they would treat her in Tripoli. Endless Medical Advantage told them they would cover the 25% cost that UNHCR wouldn't cover. This meant that, more than 24 hours after the burns were first caused, the young girl was admitted to the hospital where she would receive treatment for a month. Without the pressure by EMA and other NGOs, this young girl's burns would likely have proved fatal.

While these costs were covered by EMA and, as the girl was a registered refugee, by the UNHCR, many similar situations occur where refugees cannot get the treatment they desperately need.

It is of little surprise, then, that in a survey conducted by AOA, 85% of refugees living in Lebanon who

replied to the question as to whether healthcare was easy to access, said it was not. And 82% of those who had visited a healthcare provider, said they were unsatisfied with the treatment they received. Many also complained about the costs – with refugees saying they went without medication, including for diabetes.

AOAV met with one mother whose child had passed away four months before the researchers' visit; she claimed that she could not afford the surgery her daughter needed. The operation, it was stated, would have been curative. Other parents told of similar treatments or operations they could not afford for their children; including severely disabled children unable to access care or assistance. The parents of another boy who didn't receive treatment risked returning to Syria for treatment. Another refugee told AOA about a Syrian who had recently been hit by a car. They took



Young child at a camp in Bekaa Valley.



Refugee mother and son in Lebanon.



Patient at a hospital in Avdiivka.



A disused wing in a hospital in Avdiivka.



A refugee camp in Bekaa Valley.

him to hospital, but the centre allegedly would not accept him until they paid 200,000LBP (about \$130); they were unable to pay. The refugee was unregistered, so the hospital refused to assist him and he died. These incidents were confirmed by a local healthcare organisation, who revealed that such incidents were not rare.¹³⁴

Accessing psychological support is also difficult. Of the 120 Syrian refugees AOA surveyed across Lebanon, 96 (86%) of those who answered, said that they had not been offered psychological support. Also, 87% (112) of those that answered, reported being unable to access psychological support. There are many reasons why these answers may have been given; some, for instance, may be unaware of where support can be accessed. Yet, among those refugees AOA spoke to in Lebanon, the lack of psychological support appeared to be a key complaint.

An additional key area in which all Syrian refugees seemed to lack access was dental care; with few prioritising such treatment. This gap was identified as key by Endless Medical Advantage.¹³⁵ They said that almost all the patients they see need dental care.

While much has been done to ensure access to primary healthcare in Ukraine, Syria and host communities, many of those injured by explosive weapons will have complex health needs. Such needs require specialist care, but often access to specialist services is unavailable. There are many reasons for this, including damage to healthcare and loss of medical personnel, but these also involve complex issues around access to transport and treatment costs.

CONCLUSION

AOAV welcomes the increased research into blast injuries and their treatment, particularly the release of the Paediatric Blast Injury Field Manual,¹³⁶ as well as ongoing research into the reverberating impacts of explosive weapons.

Given, though, the complex health needs caused by explosive harm, it is small wonder that patient needs frequently fail to be met. Such a failure is all too often exacerbated by a lack of funding, with many conflict-affected populations competing over a dwindling pool of funds. In 2017 and 2018, aid funds covered less than half of all humanitarian aid needed.¹³⁷ This means that the needs of survivors of explosive violence persists and go untreated, often for decades after the conflict ends. With humanitarian aid usually lasting for only six to 12 months after the end of a war, blast injury research highlights why this short time frame is wholly insufficient.¹³⁸

NGOs providing healthcare to Syrian refugees in Lebanon consistently expressed concern over decreasing funding, and said that a key reason for this low prioritisation was a false belief that refugees could be encouraged through poorly

funded Lebanese services to return, instead, to Syria. The truth is that many of those in Ukraine, Syria, refugee host countries, as well as other conflict-affected countries, remain unable to access essential healthcare. Reducing an already meagre amount to encourage refugees to leave is inhumane and counter-productive. Far more must be done by states to respond to this vital need.

Perhaps more importantly, though, needs to be action to prevent civilians being harmed by explosive violence in the first place. Preventative action is urgently needed. Far too many civilians are killed and injured by explosive violence, particularly when explosive weapons are used in populated areas. AOA’s data shows that – on average – more than nine in ten deaths and injuries will be civilians when explosive weapons are used in populated areas.

One of the best ways to reduce such devastation would include preventing the use of explosive weapons with wide-area impacts in populated areas. And, while efforts to develop a political declaration to end the use of such weapons in populated areas are on-going, commitment by states cannot come soon enough.

RECOMMENDATIONS

- AOA calls on states and other actors to politically commit to avoid using explosive weapons with wide-area effects in populated areas.
- States and users of explosive weapons should work towards the full realisation of the rights of victims, including those killed and injured, their families, and affected communities. They should strive to ensure the timely and adequate provision of needed services for the recovery, rehabilitation and inclusion of victims of explosive violence, without discrimination.
- States should be cognisant of the fact that even when civilians are not killed, destruction to civilian infrastructure can have widespread and long-term harm for communities.
- More research is needed to better understand the long-term harm to health for those impacted by the use of explosive weapons in low and middle-income countries.
- Greater efforts should be made to record, analyse and share data on lasting health impacts from explosive weapons.
- Efforts should be made to raise the standards of living conditions for refugees and the displaced, to reduce further injury as well as complications to existing injuries as a result of explosive weapons, and to alleviate the consequential burden on the local healthcare infrastructure.



Refugee and his children in Bekaa Valley.

As a member of the International Network on Explosive Weapons (INEW), AOA and its colleagues urge states and all users of explosive weapons to:

- Acknowledge that the use of explosive weapons in populated areas causes severe harm to individuals and communities and furthers suffering by damaging vital infrastructure;
- Strive to avoid such harm and suffering in any situation, review and strengthen national policies and practices on the use of explosive weapons and gather and make available relevant data;
- Work for the full realisation of the rights of victims and survivors;
- Develop stronger international standards, including certain prohibitions and restrictions on the use of explosive weapons in populated areas.

In developing these standards, states, and other actors should make a commitment that explosive weapons with wide-area effects will not be used in populated areas.

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