The Impact of the Conflict on the Health Sector – 04 April 2022

Key Takeaways

- Attacks on health facilities continue in Ukraine with 85 confirmed attacks on health care documented via the WHO’s Surveillance System for Attacks on Health Care (SSA), leading to 73 deaths and 43 injuries as of April 04. Health centres in the areas most heavily affected by conflict, and where needs are therefore most acute have tended to experience the worst damage. In addition, information from these areas is limited so current figures are likely to be an underrepresentation of the actual situation.

- Disruption of health services, large-scale displacement and the necessity to prioritise trauma treatment are all negatively impacting the treatment of long-term conditions such as diabetes, cancer and HIV. These factors and the limited access to health services due to conflict can all result in indirect deaths.

- Medical supplies across many parts of Ukraine are running low, especially in conflict-affected areas as access to many locations remains blocked. A critical shortage of oxygen is also a major concern and will have an impact on the ability to treat patients with COVID-19 and many other conditions.

- The risk of outbreaks of diseases such as cholera, COVID-19 and measles are being exacerbated due to a lack of clean drinking water, crowded conditions in collective centres and bomb shelters as well as underlying conditions such as low vaccination rates.

Figure 1: Violence Against Health Care in Ukraine
The Health Sector already faced challenges before the February 24th Russian Military Incursion

Efforts to improve the quality of health services have been constrained by the COVID-19 pandemic and, in Donetsk and Luhansk, by the impact of seven years of conflict

Although recent reforms have seen some improvement in the health care system, the population faces challenges of affordability and quality of services, especially after the pressure put on the health sector by the COVID-19 pandemic. The health system in the conflict-affected areas of Donetsk and Luhansk in particular faced problems due to conflict and a lack of investment (Georgetown University 28/03/2022). In 2021, the GHS Index - that benchmarks health security in 195 countries - scored Ukraine 39th out of 43 countries in Europe (GHS Index 07/12/2021).

Eight years of Conflict has severely impacted the capacity of the heath sector in Donetska and Luhanska oblasts

The impact of eight years of conflict has left the health sector struggling to meet health care needs in both Government Controlled Areas (GCA) and Non-Government Controlled areas (NGCA) of Donetska and Luhanska oblasts. Insecurity, damage to and lack of maintenance of aging health facilities and medical equipment, shortages of medicines and medical supplies, understaffing, health-care system reforms and curtailed access to referral hospitals and pharmacies have all impacted the provision of and access to health-care services. The age of the population is another factor with 31 percent of the conflict-affected population aged over 60. In GCA the vast majority of elderly persons surveyed are affected by chronic illness or limited mobility. Access to and provision of health-care services is also affected by limited availability of public transport, damage to road infrastructure and restricted movement through the crossing points, particularly affecting those living in isolated communities and IDPs in rural areas (OCHA 10/02/2022, MdM 22/07/2021, Health Cluster 25/07/2019).

The COVID-19 pandemic has generated higher vulnerability amongst the population and led to unmet health needs

In Donetska and Luhanska oblasts, the COVID-19 pandemic has led to restrictions on movement, primarily applied in NGCA, and decreasing livelihood opportunities. This has pushed fragile and weakened health systems to a breaking point (OCHA 10/02/2022). Low vaccination uptake is also driving the pandemic, with only 35% of residents across Ukraine vaccinated for COVID-19, the risk can be considered as fairly high (Our World in Data 23/02/2022). The direct impact of the pandemic has also been significant with (at time of writing) close to 5 million registered cases of COVID-19 and over 100,000 related deaths (death rate of 250 per 100,000) recorded in Ukraine (Worldometer 30/03/2022).

Health statistics highlight longer term underlying issues

The national crude mortality rate in 2019 was scored at 14.7 (number of deaths per 1000 people), the highest rate amongst neighbouring countries. Vaccination coverage in the country is among the lowest compared to neighbouring countries and is at or below the target threshold for BCG, DTP3, Pol3, MCV, and HepB3 (these vaccines cover a variety of diseases including as tuberculosis, Diphtheria and Tetanus). HIV also remains a significant challenge in Ukraine which stands as the country with the second highest HIV prevalence rate in the (WHO) European region. More recently, vaccination rollouts have also proved challenging with recent outbreaks of polio (2021) and measles (2017-2019). COVID-19 vaccination rates are also amongst the lowest in Europe (Health Cluster 03/03/2022, The Lancet 12/02/2022).
Attacks on health care have resulted in damage to health facilities, transport, supplies and warehouses as well as the death and injury of personnel and patients.

Since the beginning of the war, Ukrainian medical facilities, including hospitals, ambulances, medics, and patients have been in the line of fire. Attacks on health care are a violation of international humanitarian law. However conflict damage to health facilities has been recorded since the second day of the war, when three Ukrainian medical facilities were reported to have been hit, including a children’s hospital and cancer centre (AP News 26/03/2022). As of 31 March, 82 confirmed attacks on health care have been documented via the Surveillance System for Attacks on Health Care (SSA), resulting in 72 deaths and 43 injuries. (OCHA 28/03/2022). However, statistics for the number of Ukrainian medical facilities damaged vary widely, for example the Ukrainian Health Ministry says 248 medical facilities have been damaged, with 13 completely destroyed, while Insecurity Insight, documented 83 incidents of violence against health care as of March 25 (AP News 26/03/2022, Insecurity Insight 25/03/2022). Lack of electricity and communication blackout in some cities are likely to have resulted in an undercount of attacks. However, there is a risk of more destruction and damage to the approximately 1000 health care facilities in or near conflict-affected areas (Insecurity Insight 25/03/2022, WHO 23/03/2022).

Reports show that explosive weapons have been used against hospitals and health workers. Insecurity Insight documented 52 cases of explosive weapons use against health, including 32 artillery strikes, six missile attacks, five rocket attacks, four airstrikes and two instances of banned cluster munition use (Insecurity Insight 25/03/2022). According to the SSA, 68 attacks destroyed or damaged health care facilities. The destroyed facilities include the hospitals in Izyum city (Kharkiv oblast), Makariv town (Kyiv oblast), and Volnovakha city (Donetsk oblast). Ambulances have also been attacked while transporting patients, medication, or supplies, or while responding to an emergency call; WHO recorded 11 attacks on transport. Attacks on health also included health care personnel, such as medics, nurses and doctors; at least 12 health workers have been killed, and almost 30 injured since the conflict began. The use of explosive weapons in populated areas has a widespread humanitarian impact with those injured often requiring specialist medical and psychosocial care, in both the immediate and long term. As well as the damage to health facilities, widespread damage can occur to housing and essential infrastructure, such as drinking water and wastewater treatment plants and electricity supply systems (increasing the risk and spread of disease). Explosive weapons also leave explosive remnants of war that can kill and injure civilians long after hostilities have ended and prevent or delay reconstruction work or agricultural production, as well as the return those displaced (OCHA accessed 03/04/2022, WHO accessed 29/03/2022, Insecurity Insight 25/03/2022).

**Humanitarian Impact on the Health Sector**

Damage to health care infrastructure and ongoing hostilities is limiting the availability of health care services when most needed to treat the high number of casualties.

Damage to overall health care infrastructure directly impacts people’s ability to access essential health services – especially women, children and other vulnerable groups (WHO 13/03/2022). The destruction of health care facilities and targeting of health care workers has resulted in limited access to urgent medical care, where needs are becoming

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2. ([OCHA](https://www.ocha.org/), 10/03/2022, [BBC](https://www.bbc.com/), 10/03/2022, [The New Arab](https://www.thenewarab.com/), 09/03/2022).

For an in-depth exploration and details of health care attacks see WHO’s Surveillance System for Attacks on Health Care (SSA), reports by Insecurity Insight and Associated Press and Frontline’s project, War Crimes Watch Ukraine.
most acute (Direct Relief 22/03/2022). Attacks also curtailed access to referral hospitals and pharmacies. Approximately half of Ukraine’s pharmacies are thought to be closed. A number of hospitals have been repurposed to care for the wounded: a shift due to necessity – which comes at the cost of essential services and primary health care (WHO 23/03/2022). The lack of available medical facilities is leading personnel to create makeshift areas for treating patients; for example one children’s hospital in Odesa, has placed hospital beds in what was storage space to hide when air raid sirens sound (Global News 27/03/2022). It is expected that facilities will face staff shortages due to closure of facilities for security reasons and with some staff being displaced. Also, the insecurity facing health workers due to attacks on health infrastructure will make it difficult for personnel to go to work (Euractiv 03/03/2022, Health Cluster 03/03/2022, WHO 02/03/2022). The lack of available medical facilities is leading personnel to create makeshift areas for treating patients; for example one children’s hospital in Odesa, has placed hospital beds in previously designated storage space to shelter patients when air raid sirens sound (Global News 27/03/2022).

These attacks put functioning facilities and remaining personnel under even more pressure, leaving them overwhelmed and under-resourced. Additionally, in conflict zones, trained medical staff such as surgeons, nurses and therapists can lack the emergency medical training and expertise they need to perform life-saving procedures on trauma patients, particularly treating children (NPR 18/03/2022, Al Jazeera 11/03/2022, Save the Children 01/03/2022). Should casualties continue to increase Emergency Medical Services (EMS), surgical departments and intensive care units are likely to become overwhelmed with trauma patients as has already been reported in some conflict-affected areas of east Ukraine (MSF 11/03/2022, WHO 02/03/2022).

Essential health services have been disrupted and are collapsing and jeopardising the treatment of chronic/non-communicable diseases (NCDs), including diabetes, cancer, and cardiovascular diseases. Equally, assistance to people with disabilities has been disrupted (WHO 02/03/2022) in conflict affected areas or near the conflict line, treatments of chronic conditions have almost stopped (WHO 23/03/2022).

**Disruption in vaccination campaigns heightens health risks for children**

Since the beginning of the war, several vaccination campaigns have been slowed down or even disrupted. This could quickly lead to outbreaks of vaccine-preventable diseases, especially in overcrowded areas where people are sheltering from the violence (UNICEF 24/03/2022, WHO 24/03/2022). Vaccination coverage is already low in the country, aggravating the risk of outbreak, notably of measles and polio (IRC 25/03/2022, OCHA 15/03/2022) and could potentially increase the transmission of the COVID-19 virus (OCHA 25/03/2022).

**Physical and geographical barriers to health facilities and medical supplies in conflict-affected areas**

Restricted mobility due to insecurity and lack of public transport has made it more difficult for patients to reach supplies, facilities and medical personnel (OCHA 28/03/2022, WHO 24/03/2022). Poor or no access to primary health care institutions, especially in areas of intense fighting, disrupts the referral system making primary and secondary and tertiary care (hospitals and specialist centres) inaccessible to the population (WHO 02/03/2022). According to MSF, trains are still being used to move supplies. Insecurity has caused humanitarian organisations to opt out of operating in conflict-affected areas (MSF 11/03/2022). Additionally, there are incidents in which Russian forces blocked ambulances and paramedics. Such incidents have prompted one hospital, Trostyanets City Hospital, to offer primary care consultations online (Insecurity Insights 12/03/2022).

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1 (Kyiv Independent 31/03/2022, CNN 30/03/2022)
Medical supplies across Ukraine are running low
Supply chains have been severely disrupted due to the war, with increased demand on urgent medical supplies, and with many distributors not able to reach conflict-affected areas. Hospitals in the east - which are already overwhelmed with increasing numbers of trauma patients - are facing shortages in medical supplies. (Reuters 14/03/2022, MSF 11/03/2022). Humanitarian organisations are also unable to send medical supplies as many locations remain blocked (OCHA 29/03/2022). Manufacturers are facing shortages of raw materials to produce supplies, for example, there is a shortage of zeolite, a chemical product necessary to produce safe medical oxygen. Furthermore, there are at least three major oxygen plants in Ukraine that have now closed. As early as February, WHO warned of dangerously low levels of medical oxygen supplies in Ukraine, with some hospitals already running out. Medicinal oxygen is required to treat a wide range of conditions such as pregnancy complications, chronic conditions, injuries and trauma, and COVID-19 (Euractiv 03/03/2022, WHO 27/02/2022).

There are reports of residents in Kyiv queuing for hours to access medicine. While less-specialised medicines such as painkillers and common antibiotics are mostly obtainable, drugs for serious conditions such as cancer treatments, insulin, thyroid medications and HIV medications are in shorter supply. Essential vaccinations for childhood diseases are also becoming crucially low in stock Access to state programmes, such as “affordable drugs” and free insulin for diabetic patients has also been limited (COAR 25/03/2022, Euractiv 03/03/2022, WHO 02/03/2022, Reuters 01/03/2022). For the elderly the situation is particularly acute. Many older people were unwilling or unable to flee the conflict and many now lack access to the medicine they need to manage chronic health conditions. In addition, mobility problems make travel to the health facilities that are open much more difficult (Help Age 04/03/2022).

The disruption of health care services due to war increases the prevalence of infectious diseases, such as COVID-19, polio and measles both because people are in crowded conditions and because vaccine campaigns are often disrupted by the conflict. Ukraine already has high rates of Tuberculosis (TB) among its population, and they are now facing increased risk due to crowded conditions, and the destruction of hospitals and dispensaries that provide critical TB treatments (Scientific American 29/03/2022, Direct Relief 22/03/2022, WHO 02/03/2022).

Maternal health care and Child Health Services have been severely impacted by the damage to health care infrastructure, disruption of services and a lack of safe access
Sexual, reproductive and maternal health care, ante-natal care, and child health services have been impacted by the war, putting the lives of mothers and children at risk whose needs are rising. Children injured in conflict zones are already at even greater risk than adults due to their specific vulnerabilities and treatment needs for blast wounds. Children have weaker necks and torsos than adults, so less force is needed to cause a brain injury. In warzones, head injuries are common in young children, with patients under seven years old twice as likely to present a head injury than those over seven years (Save the Children 01/03/2022).

Patients in maternity wards and children’s hospitals in conflict-affected areas are hiding underground with little light and limited access to medicine, clean water and food (Save the Children 01/03/2022). The most vulnerable and critical cases, such as babies in neonatal intensive care units or those who have their beds equipped with endotracheal tubes, monitors and machines, are not portable. Therefore, moving to a safer area such as the hospital basement is not an option, thereby, leaving them exposed to air raids (Global News 27/03/2022). The lack of access and dangerous travel cause pregnant women to be afraid to go to hospitals, and lead them to giving birth in inadequate conditions, such as giving birth in bomb shelters with a lack of medicine and equipment. The risk to mothers and babies will grow, as the health system continues to collapse (IRC 25/03/2022, Direct Relief 22/03/2022, The Independent 18/03/2022).
The war is having a massive impact on individuals’ mental health

War-affected civilians are at heightened risk of mental health problems, including post-traumatic stress disorder (PTSD), anxiety, and depression. Doctors responding to the Ukraine crisis are already highlighting the impacts of the war on the population. Data from the WHO show that recovery from PTSD is particularly slow in the context of war, indicating that the mental health impacts of the current crisis could be long lasting, including PTSD, anxiety, depression and relapse of alcohol. In addition, those displaced by the conflict can be separated from social support systems which can lead to increased stress levels abuse (ABC News 22/03/2022, The Lancet 16/03/2022).

Children are especially vulnerable to mental health issues. Potential separation from caregivers or if caregivers themselves experience depression or anxiety can increase the risk of war trauma. The prolonged activation of stress hormones in early childhood can reduce neural connections in areas of the brain dedicated to learning and reasoning, affecting children’s abilities to perform later in their lives (Al Jazeera 31/03/2022, The Conversation 07/03/2022).

Health Needs are increasing

Provision of conflict-related trauma and injuries is a major need in areas affected by conflict

There is an urgent need for surgical, trauma, emergency room and intensive care equipment and drugs, as well as backup generators and fuel for health-care facilities especially in areas heavily affected by the conflict. The loss of operating capacity due to conflict damage, reduced staff and lack of medicines all contribute to a more limited availability of health care which may increase the risk of wound infections and trauma-related deaths. It is also critical that safe windows are provided for the evacuation of patients from conflict zones and access for the delivery of medical supplies and equipment (MSF 03/04/2022, JAMA 01/04/2022, WHO 24/03/2022, MSF 11/03/2022).

In cities, such as Kyiv, hospital staff have had refresher training to prepare for dealing with Mass Casualty Events. Surgical staff received training to hone skills in rapid lifesaving trauma stabilisation and surgery; hospital administration teams were given advice on how to manage their supply lines and the organisation of basic essentials to manage high numbers of war-wounded patients over an extended period. More of this type of training and preparedness work will be needed should the conflict continue to escalate (MSF 18/03/2022).

Efforts are needed to maintain neonatal health care and support services to pregnant and lactating women especially in conflict affected areas where the risks are increasing

With more than 4,300 babies born in Ukraine since the conflict began and 80,000 births expected in the next three months, there will be widespread needs for neonatal and antenatal services. Replenishment of oxygen reserves and additional medical supplies for the management of pregnancy complications are desperately needed. Support needs to be scaled-up to keep perinatal and maternal hospitals running and the services they provide accessible despite the disruptions and competing priorities. Conflict-affected areas are particularly impacted and women can be too scared to travel to hospital due to dangers of shelling, putting both mother and child at risk (IRC 25/03/2022, Devex 23/03/2022 Direct Relief 22/03/2022, OCHA 15/03/2022, OCHA 14/03/2022).

It is estimated that over two million children under the age of five and pregnant and breastfeeding women in Ukraine are in need of lifesaving nutrition assistance (WHO 24/03/2022).

Resumption of COVID-19 testing and vaccination and immunisation campaigns for measles and polio are urgently required

COVID-19 risks are being driven up due to crowded conditions in collective centres and in bomb shelters; at the same time COVID-19 vaccination rates have drastically slowed and both testing levels and available beds for COVID-19 patients have decreased. It is therefore important that capacity for the surveillance and treatment of COVID-19 is
strengthened and the vaccination programme rollout continues, otherwise Ukraine could face the additional burden of dealing with an escalation of the COVID-19 situation (WHO 23/03/2022, WHO 24/03/2022).

The conflict is also putting children at risk due to the disruption of immunisation campaigns, including for polio, measles; their resumption also remains critical (OCHA 15/03/2022).

Access to health facilities and the provision of critical medicines needs to be maintained for those with long-term health conditions

Efforts to alleviate disruption to the supply of medicines in conflict zones are desperately needed. Some areas, such as the city of Mariupol in the south, have suffered critical shortages of medical supplies (OCHA 15/03/2022, WHO 24/03/2022). There are also reports of a growing demand for medicines to treat respiratory complaints arising from days and nights spent in bomb shelters, conditions which pose greater risks for the disabled and the elderly. Elderly people are often the least mobile, so are often more likely to stay in conflict-affected areas and many have underlying health conditions (COAR 25/03/2022, MSF 11/03/2022).

Critical health services need to be maintained for those suffering from long-term diseases such as those living with HIV (numbering more than 250,000 people in Ukraine) or those requiring dialysis programs. Shortages of insulin, thyroid medications and cancer treatments have been reported in conflict zones and additional needs include medications for asthma and hypertension (NYT 26/03/2022, COAR 25/03/2022, Direct Relief 22/03/2022, OCHA 15/03/2022). With intensive care beds taken up by trauma victims, there is limited space to deal with COVID-19 patients or those with serious non-war related illnesses (NPR 16/03/2022).

Support to deal with the mental health impact of the conflict will be needed

At a time when mental health and psychosocial support needs of the population are intensifying, the availability of psychosocial support services is decreasing due to conflict-related disruptions and lack of access. Health care workers face overloading and understaffing and are themselves at increased risk of psychological distress and mental health disorders because of witnessing traumatic events (WHO 02/03/2022). Therefore, urgent support to strengthen mental health provision for the conflict-affected population and health professionals is required.

A lack of food, clean water and heating drive increasing Health Issues

Dire WASH conditions are leading to major health risks for the population in conflict-affected areas

Across many of the conflicted affected areas there has been a deterioration in access to and the quality of water sources, resulting inevitably in risks for the population’s health. Before the war started, WASH needs were already very high in Eastern Ukraine with about 33% of the population in GCA in need of WASH assistance (OCHA 17/02/2022). The situation is worse in cities suffering shelling and bombardment. Since early March, damage to power lines has led to the stoppage of two filter stations and all water pumping stations in Mariupol. As a result, about half a million people were without water (WASH Cluster 02/03/2022, MSF 12/03/2022). Although many residents have finally been able to flee the city, around 170,000 are reported to be unable to leave and still lack clean water (Reuters 30/03/2022). In the city of Chernihiv, 150,000 people are also unable to leave and are without running water. Local authorities have rationed drinking water to 10 litres per person (which is in line with SPHERE standards) (The Guardian 23/03/2022).

The lack of drinking water alone can lead to dehydration and can kill an individual in less than a week (NYT 29/03/2022). Moreover, the lack of access to (drinking) water and hygiene coupled with the lack of access to sanitation – with many residents in urban centres hiding in overcrowded shelters - increases the risk of transmission of foodborne and waterborne diseases (WHO 24/03/2022, IOM 20/03/2022, WHO 17/03/2022). The risk of infectious disease outbreaks, including tuberculosis and diarrheal diseases, are also increasing. Diarrhoea can lead
to dehydration that can ultimately result in death, especially amongst children. MSF also warned of the risk of cholera in Mariupol as the city encountered an outbreak in 2011 (NYT 26/03/2022, OCHA 17/03/2022, MSF 12/03/2022).

**There are reports of people dying from starvation in besieged cities**
A severe lack of food in conflict-affected areas, most specifically besieged cities, such as Mariupol and Chernihiv, has been reported. Insufficient food stocks and the inability to provide assistance leads to hunger, malnutrition and, ultimately, to starvation and death. Though figures are unavailable, testimonies from displaced people and trapped residents state that people are starting to die from starvation (The Guardian 29/03/2022, NYT 29/03/2022).

**Many vulnerable people are at risk due a lack of heating in sub-zero temperatures**
Lack of heating during the winter when temperatures are well below zero increases the risk of contracting flu and suffering from deadly hypothermia (WHO 17/03/2022, OCHA 15/02/2021). Populations trapped in besieged areas and living without water or electricity are suffering from the lack of heating, in below-freezing temperatures (Al Jazeera 23/03/2022, Human Rights Watch 21/03/2022).

**Damages on nuclear power stations and chemical plants can lead to major health issues**
Russian troops who have now left the Chernobyl nuclear station may have suffered from significant radiation while digging trenches in a contaminated site (Radio Free Europe 01/04/2022). The lack of electricity caused by the war could lead to toxic waste leaks in the station, and recent fires in the surrounding forests (caused by the fighting) have increased radioactive air pollution (OCHA 28/03/2022). Other incidents show the high risk of damage to nuclear or chemical plants with shelling at the Zaporizhzhya Nuclear Power Plant causing a fire; Shelling also caused the release of the highly dangerous ammonia gas at the Sumykhimimprom chemical plant (New Scientist 22/03/2022, France24 20/03/2022, Radio Free Europe 04/03/2022).

**Damages to schools and disruption of the education system is adding a burden on children’s mental health**
As mentioned in the impact section, mental health disorders are tightly linked to war and traumatic events, both for adults and children. Children can suffer even more from these mental health issues with the destruction and damages to schools (733 facilities affected by March 30) and the disruption of the education system that was decided on February 25 (UN News 30/03/2022, Education Cluster 04/03/2022). The lack of safe space offered by schools is an additional psychological burden for the 5.7 million school-aged children who used to have an educational structure protecting them. This, coupled with the war trauma, can partly lead to PTSD that includes emotional and physical symptoms and which can last until adulthood (Al Jazeera 31/03/2022, Education Cluster 04/03/2022).

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**About this brief**
The analysis provided is a synthesis of information collected and tagged using the DEEP platform from publicly available sources and supplemented by assessment data provided by humanitarian partners working in Ukraine and neighbouring countries. This brief was prepared on behalf of the Information Management and Analysis Cell (IMAC) in Ukraine, but the analysis provided is produced independently by Data Friendly Space (DFS). MAPACTION provided mapping support to this brief.