

<sup>2</sup> UNHCR. <http://data2.unhcr.org/en/situations/ukraine>

## Health status and threats

### Population mortality

The national crude mortality rate (number of deaths per 1000 people) for 2019 was 14.7, the highest among all neighbouring countries. The under-5 mortality rate in Ukraine has been gradually decreasing from 20 deaths per 1000 live births in 1990 to eight deaths per 1000 live births in 2019<sup>3</sup>.

### Childhood Vaccination coverage

Vaccination coverage in Ukraine is among the lowest in the WHO European Region, and is at or below the target threshold for BCG, DTP3, Pol3, MCV, and HepB3 (Table 1). There is increased risk for diarrhoeal disease in children as the rotavirus vaccine is not included in the routine vaccination schedule. According to UNICEF, vaccine hesitancy poses major challenges.<sup>4</sup>

Table 1: Coverage estimates for immunizations administered in 2021 for Ukraine

| Vaccine                                          | Ukraine % | Target* % |
|--------------------------------------------------|-----------|-----------|
| BCG (Tuberculosis)                               | 82        | >79       |
| DTP3 (Diphtheria, Tetanus, Pertussis - 3rd dose) | 80        | >79       |
| Pol3 (Polio - 3rd dose)                          | 80        | >89       |
| MCV1 (Measles - 1st dose)                        | 89        |           |
| MCV2 (Measles - 2nd dose)                        | 87        | >95       |
| HepB3 (Hepatitis B - 3rd dose)                   | 79        | >90       |
| Hib3 (Haemophilus influenzae type b - 3rd dose)  | 87        | >79       |
| RCV1 (Rubella - 1st dose)                        | 89        | >79       |

\* Coverage needed for immunity sufficient to likely confer either herd (community) protection or a high level of individual protection.

### COVID-19 Vaccination

Vaccination roll-out has been slow. Ukraine currently has the seventh lowest rate of vaccine uptake in Europe, with 36% uptake of at least one dose and 34% uptake of a complete vaccine series, increasing the risk of severe disease, particularly given the high burden of comorbidities in the population<sup>5</sup>. WHO has set a target of 70% coverage by mid-2022.

Table 2: COVID-19 vaccination coverage for Ukraine, as of 20 February 2022

| Vaccinated with at least one dose |    |             | Fully-Vaccinated |    |             | Booster dose |   |             |
|-----------------------------------|----|-------------|------------------|----|-------------|--------------|---|-------------|
| #                                 | %  | per 100 000 | #                | %  | per 100 000 | #            | % | per 100 000 |
| 15 718 610                        | 36 | 41 272      | 15 061 823       | 34 | 39 547      | 675 521      | 2 | 1774        |

### Influenza Vaccination

As of 20 February 2022, 164 939 people had been vaccinated against influenza this season. Vaccines against influenza are available for free for health care workers and at cost from pharmacies for the general public.

<sup>3</sup> World Bank, <https://data.worldbank.org/indicator/SP.DYN.CDRT.IN?locations=UA>

<sup>4</sup> UNICEF, [Vaccination is a superpower against diseases. Make time to vaccinate children before the start of the school year!, 25 August 2021.](#)

<sup>5</sup> WHO, <https://covid19.who.int/table>

## Conflict-related drivers of mortality and morbidity

### Disruption to medical services and supplies

The conflict is impacting access to medical services and supplies in several ways. There are reports, both verified and under investigation, of health facilities being damaged or destroyed. Stock ruptures due to supply chain disruption are already occurring, and there are already dire warnings concerning the availability of beds and oxygen, including for the treatment of severely ill COVID-19 patients. It is reasonable to assume that there will be staff shortages at health facilities throughout Ukraine, with closures of facilities for security reasons and with some staff being displaced, either internally or to neighbouring countries. Finally, accessibility to health services is likely to be severely disrupted within areas experiencing active conflict, with much of the population unable to access health facilities due to physical and geographical barriers.

### Population displacement

At the time of writing, over 1 million refugees were already displaced to neighbouring countries, with UNHCR estimating that this could rise to 4 million by July 2022<sup>6</sup>. Population displacement is a risk factor for disease, meaning the conflict-affect populations who have relocated internally (IDPs) or across country borders (refugees) are at greater risk for a wide range of conditions, both communicable and non-communicable. Displaced populations are at increased risk of communicable diseases (e.g., COVID-19, measles) primarily due to closer and more intense social mixing, poor quality shelter and WASH (water, sanitation, and hygiene) conditions, greater exposure to the elements including the cold winter weather, and exacerbating factors such as nutritional stress. The risk of noncommunicable disease (NCDs, e.g., hypertension, diabetes) is increased by the limited access these populations have to essential health services, particularly primary health care, and medications. NCDs are particularly prevalent in the older persons; many of whom have not been able to flee the hostilities due to reduced mobility and financial means.

### Key health threats

Table 3 summarizes the key anticipated or known health threats. This assessment is based on the known epidemiological and disease profile of the population, and crisis-related factors known to drive mortality and morbidity.

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<sup>6</sup> UNHCR, <https://data2.unhcr.org/en/situations/ukraine>

Table 3: Key health risks for conflict-affected population in the course of the next three months.

| Key health risks over the coming 3 months                  |               |       |                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------|---------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public health risk                                         | Level of risk |       | Rationale                                                                                                                                                                                                                                                       |
| Months starting now                                        | 1             | 2 - 3 |                                                                                                                                                                                                                                                                 |
| COVID-19                                                   |               |       | Decreasing trends, but from very high level of incidence and bed occupancy for ICU care. Limited oxygen supplies substantially impact capacity to treat severe patients. Unsanitary, crowded living conditions with poor ventilation; low vaccination coverage. |
| Other infectious respiratory diseases, including influenza |               |       | Poor hygiene and sanitation, overcrowding, poor shelter, cold. Low risk of influenza-associated morbidity given low levels of seasonal circulation, further reducing as season abates.                                                                          |
| Diarrhoeal diseases                                        |               |       | Poor hygiene and sanitation, overcrowding.                                                                                                                                                                                                                      |
| Measles                                                    |               |       | Increased risk of measles transmission given crowded living conditions with poor ventilation, prior endemicity, and reduced vaccine coverage in recent years.                                                                                                   |
| Maternal and neonatal health                               |               |       | Caesarean deliveries accounted for roughly one quarter of all deliveries in 2019; access is likely to be limited. Substantial risk of unsafe deliveries in immediate term.                                                                                      |
| Polio                                                      |               |       | Ongoing outbreak of circulating vaccine-derived poliovirus type 2 (cVDPV2), and low uptake mass immunization campaign (22%). Risk of spread into surrounding countries.                                                                                         |
| Cholera                                                    |               |       | Last outbreak in 2011. Poor hygiene and sanitation, overcrowding, poor shelter and disruption to water and sanitation.                                                                                                                                          |
| STIs                                                       |               |       | Poor hygiene and sanitation, social conditions, GBV                                                                                                                                                                                                             |
| Cardiovascular disease (CVD) (e.g., heart attack, stroke)  |               |       | Interruption in supply of medicines and limited access to health care; critical for people with uncontrolled blood pressure and/or people at higher risk of stroke; most mortality expected in immediate term.                                                  |
| Chronic respiratory diseases (e.g., COPD, asthma)          |               |       | Reduction in chronic medical supplies, limited oxygen availability, and potential stressors from increased risk of respiratory infections due to the living conditions (overcrowding, cold, poor shelter); most mortality expected in immediate term.           |
| Diabetes                                                   |               |       | Disruption to essential services and supplies of medicines, particularly insulin; most mortality expected in immediate term.                                                                                                                                    |
| Cancer                                                     |               |       | Disruption of treatment and health care capacity leading to increased risk of negative outcome for oncology patients. Particularly high risk for individuals under immunosuppressive therapy given increased risk of infection in the context of the crisis.    |
| Chronic infectious diseases (TB/HIV/HBV/HCV)               |               |       | Interruption of treatment likely – impact on viral load and disease if treatment interrupted for a number of weeks. Limited access to health care for acute flare ups and opportunistic infections may result in excess deaths.                                 |
| Mental health                                              |               |       | Exacerbation of chronic mental health problems likely and high levels of PTSD, depression and anxiety among affected population of all ages.                                                                                                                    |
| Crisis-attributable injuries                               |               |       | Likely increase in injuries and trauma from violence.                                                                                                                                                                                                           |
| Gender-based violence (GBV)                                |               |       | Trauma, limited access to protection/treatment/support, crowding.                                                                                                                                                                                               |
| Technological and environmental health risks               |               |       | Chemical and radio-nuclear sites could represent major health risk if damaged during ongoing conflict. Low risk of accidental exposures to biological hazards, as country not known (not likely) to have collections of high consequence pathogens.             |

Red: **Very high risk.** Could result in high levels of excess mortality/morbidity.

Orange: **High risk.** Could result in considerable levels of excess mortality/morbidity.  
 Yellow: **Moderate risk.** Could make a minor contribution to excess mortality/morbidity.  
 Green: **Low risk.** Will probably not result in excess mortality/morbidity.

## Epidemic-prone diseases

### Surveillance/early warning, alert and response capacity

The Public Health Response Monitor (PHRM), a tool launched in October 2020 as part of the country's COVID-19 response, is used to assess the policies and epidemiological situation across the different regions of the country. The PHRM collects data on regional management and coordination, funding, planning of services, case management and supporting essential health services. Public health data are supplemented with data on the epidemiological situation in each specific region and is accessible through an electronic portal.

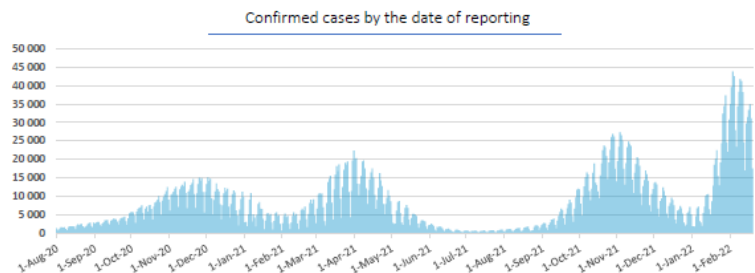
### Key diseases

#### COVID-19

During the weeks of 31 January and 7 February over 240 000 new cases were reported, the highest number of weekly cases since the start of the pandemic. As of 20 February 2022, the COVID-19 incidence rate was 11 056 per 100 000<sup>7</sup>. While a decrease in the case incidence of 43% was reported during the week 21-27 February compared to the previous week, the numbers should be interpreted with caution as PCR and RDT testing reduced by over 90% during this time, coinciding with the start of the conflict.

Table 4: Cases of COVID-19 in Ukraine, as of 20 February 2022

| Cases     | #         | per 100 000 |
|-----------|-----------|-------------|
| Confirmed | 4 720 771 | 12 395      |
| Deaths    | 104 518   | 274         |
| Recovered | 3 938 459 | 10 341      |
| Active    | 677 794   | 1780        |



At the national level, as of 1 March, 9617 hospital beds (14% of the beds allocated for COVID-19 patients) were occupied with cases of confirmed or suspected COVID-19; 8979 beds supplied with oxygen (14%) were occupied; 1074 ICU beds were occupied (21%); and 630 mechanical ventilators were occupied (10%). Following the onset of the conflict, there has been a 61% decrease in the number of beds occupied by patients with confirmed or suspected COVID-19 from 24 551 to 9617, while the number of available beds has decreased by approximately 500 (8.6%)<sup>8</sup>. The reasons may be a combination of a change in health care seeking behaviour and the repurposing of wards in anticipation of and reaction to trauma cases.

Twelve dashboards currently track COVID-19 and related health system data in Ukraine. The MOH operates [ten dashboards](#) in Ukrainian, including one which maps cases and deaths. The Office of the National Security and Defense Council of Ukraine has created a health care system dashboard that maps [medical services](#), [pharmacies](#), [hospitalizations](#), [hospital bed type and occupancy](#) and [vaccinations](#). The WHO Regional Office for Europe operates a dashboard with MOH data on [regional bed occupancy and oxygen availability](#).

#### Polio

An outbreak of polio occurred in 2021<sup>9</sup>. Two cases of poliomyelitis (polio) were reported and confirmed; both were caused by circulating vaccine-derived poliovirus type 2 (cVDPV2). In September 2021, the virus was isolated from an unvaccinated 17-month-old girl with acute flaccid paralysis from Rivne oblast in north-west Ukraine. In December 2021, the virus was isolated from an unvaccinated 2-year-old boy with acute flaccid paralysis in Zakarpattia oblast in west

<sup>7</sup> WHO EURO: Ukraine COVID-19 Situation Report February 25-27, 2022

<sup>8</sup> [WHO EURO/MoH Ukraine: Information on bed occupancy and oxygen availability in the regions of Ukraine](#)

<sup>9</sup> [WHO EURO: Catch up polio immunization campaign to begin in Ukraine](#)

Ukraine. Both sets of parents had refused vaccinations. A total of 21 individuals residing in two oblasts (Rivne and Zakarpattya) had positive isolation of cVDPV2 in stool specimens; all specimens were closely related. Overall vaccination coverage was 80% in 2021; a nationwide vaccination campaign targeting all under-vaccinated children (those having only zero or one dose) aged between 6 months and 6 years began on 1 February 2022. Achieving high uptake of this vaccination campaign has been challenging, with only 22% coverage after three weeks of the campaign (see Table 1 for vaccination coverage).

The current crisis in Ukraine increases the risk for spread of VDPV2 outside of the country, with mass displacement including transit through areas in which VDPV2 is believed to be currently circulating in Ukraine. The overall risk is currently assessed as moderate.

### **Measles**

Measles is circulating in Ukraine. In 2021, 16 measles cases were reported, the second highest number in Europe<sup>10</sup>. The country experienced a nationwide epidemic between 2017-2020, during which the MOH reported 115 543 measles cases and 40 measles deaths to WHO. Vaccination coverage in 2021 still fell below the desired 95% population threshold at 82% (Table 1). With large population movements, increased social mixing, and disruption of vaccination services, there is a risk of increasing the spread of measles in the coming weeks, which could result in substantial morbidity and mortality.

### **Cholera**

Ukraine was the last European country to declare a cholera epidemic, with 33 cases in 2011 in Mariupol (Donetska oblast), a site of ongoing conflict. While current climatic conditions are not favourable to transmission, the disruption and destruction of water supplies and WASH infrastructure increases the risk of outbreak. In addition, the risk from Russian military with recent exposure in cholera-endemic countries should be considered

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## **Endemic infectious diseases**

### **Hepatitis B and Hepatitis C**

The national government estimates the prevalence of hepatitis C (HCV) may be as high as 5% of the population, of which 3.6% have chronic HCV; most do not know their status and, subsequently, are not on treatment. As of 1 January 2021, the number of people infected with HCV was estimated at 1 342 418 and 92 591 were under medical supervision. The number of individuals infected with HBV was estimated at 559 341 and 18 433 were under medical supervision. The MOH acknowledges that epidemiological surveillance for viral hepatitis is limited. As vaccination coverage for hepatitis B does not meet population targets (see Table 1), diagnostics and treatments are limited, and the conflict may promote an increase in gender-based violence (GBV), there may be an increased risk of HBV and HCV incidence and morbidity.

### **Waterborne diseases**

Due to the deteriorated WASH situation (unsanitary & crowded conditions, disruption of water system), there is an increased risk of waterborne diseases which would exacerbate existing health conditions; however, surveillance of these conditions is limited. UNICEF estimates that children under the age of 15 living in countries affected by protracted conflict are almost three times more likely to die from diarrhoeal diseases caused by a lack of safe water, sanitation and hygiene, than by direct violence. In Ukraine, 5.5 million children are currently affected by the conflict (4.5 million resident; 1 million IDP), with an additional 0.8 million among the refugee population.

### **Influenza**

During the 2020-2021 influenza season, levels of influenza positive cases remained well below levels seen before the COVID-19 pandemic<sup>11</sup>. It is likely that influenza does not pose a significant risk to the population in the coming weeks, although respiratory disease burden may increase in the coming weeks due to overcrowding and poor hygiene and

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<sup>10</sup> [ECDC: Communicable disease threat report February 2022](#)

<sup>11</sup> [Flu news Europe: Influenza virus detections in Ukraine](#)

sanitation. Vaccines against influenza are available for free for health care workers and at cost from pharmacies for the general public. As of 20 February 2022, 164 939 people had been vaccinated against influenza this season.

## Malnutrition and child mortality

Estimates of child mortality rates in 2020 were higher than the WHO European region average (Table 6). The infant mortality rate is relatively high in Ukraine compared with other European countries, at around 6 deaths per 1000 live births, which is approximately double that of neighbouring Poland.<sup>12</sup> The ongoing conflict is likely to worsen the mortality rate through disruption of essential services and access to health care.

Table 5: Under-5, infant, and neonatal mortality rates for Ukraine and the WHO European Region, 2020.

|         | Under-5 mortality rate | Infant mortality rate | Neonatal mortality rate |
|---------|------------------------|-----------------------|-------------------------|
| Ukraine | 8.1                    | 6.9                   | 4.8                     |
| Europe  | 4.6                    | 3.8                   | 2.5                     |

Prior to the humanitarian crisis, stunting and acute malnutrition rates were perceived to be low; according to the MICS survey conducted in Ukraine in 2000, 1.3% of children aged under 5 in Ukraine were wasted. Unlike many middle-income countries, Ukraine has no policy on the distribution of micronutrient supplements; there is therefore no distribution micronutrient supplements for children or iron and folic acid supplementation for pregnant women in Ukraine.

## Sexual and reproductive health

There are very limited recent data available on sexual, reproductive and maternal health. In Ukraine in 2021 for women aged 15-49, the contraceptive prevalence rate of any method was 53%, while the unmet need for family planning rate was 6%. Although the maternal mortality ratio declined from 32 to 19 deaths per 100 000 live births between 2003 and 2017, it remains among the highest levels of neighbouring countries, and was nearly 10 times that of neighbouring Poland (source: World Bank).

Based on UNHCR's projections of 4 million refugees by July 2022, approximately 1000 births per week would be anticipated among this population. Caesarean deliveries accounted for roughly one quarter of all deliveries in 2019, and access to this service is likely to be greatly curtailed. There are substantial risks of unsafe deliveries in the immediate term, among both the conflict-affected population within Ukraine and the refugee population.

## Tuberculosis and HIV

### Tuberculosis (TB)

TB is a serious concern in Ukraine – TB was the cause of 2927 deaths in 2020 (7.0 per 100 000). When access to diagnostic and treatment programmes is reduced or interrupted, as with the conflict, infections go undetected and drug resistance can develop. WHO already identified Ukraine as one of the top 20 countries with the highest estimated number of incident drug-resistant cases in 2020 - 4257 (24% of bacteriologically confirmed cases). The level of DR-TB is particularly worrying as DR-TB is more difficult and expensive to treat and is associated with a higher mortality than TB infections that are not drug-resistant. Disruptions in services in 2020 due to the COVID-19 pandemic, saw a drop in the number of people newly diagnosed with TB compared to 2019, and subsequently those tested and treated for DR-TB. Ukraine made the fourteenth largest contribution to the global shortfall of TB notifications in 2020 compared to 2019. It is predicted that when access to TB diagnostics and services improves, there will be a rise in diagnosed and reported cases of TB, and that a higher proportion will be drug-resistant. TB treatment coverage is estimated at 82%.

Table 6: Reported cases of TB in Ukraine 1H 2019, 2020, 2021

|                           | 1H 2019 | 1H 2020 | % Change 2019-2020 | 1H 2021 | % Change 2020-2021 |
|---------------------------|---------|---------|--------------------|---------|--------------------|
| TB cases (new + relapses) | 13 512  | 9644    | -28.6              | 8 767   | -7.8               |
| MDR TB                    | 4048    | 2934    | -27.5              |         |                    |
| TB/HIV                    | 2995    | 2088    | -30.2              | 1 358   | -13.2              |

<sup>12</sup> <https://www.macrotrends.net/countries/UKR/ukraine/infant-mortality-rate>, accessed in March 2<sup>nd</sup> 2022

## HIV/AIDS

In 2020, Ukraine had the second highest rate of newly diagnosed HIV infections (39 cases per 100 000), contributing to 15% of all those diagnosed in the European region. Ukraine also had the highest rate of AIDS diagnosis (9.9 per 100 000) in the European Region in 2020. While over half of the new HIV diagnoses in Ukraine were attributed to heterosexual transmission, injecting drug use (IDU) was the reported transmission mode in 38% of new diagnoses (highest in the region). The ratio men to women who reported new infections was approximately 1.75.

Table 7: New cases of HIV infection, AIDS and deaths registered in 2020 with the MOH

|                  | #      | per 100 000 |
|------------------|--------|-------------|
| HIV infection    | 15 659 | 41.0        |
| AIDS             | 4131   | 10.8        |
| Deaths from AIDS | 2112   | 5.5         |

Table 8: Patients registered in health care facilities that carry out medical supervision of PLHIV, as of 1 January, 2021

|               | #       | per 100 000 |
|---------------|---------|-------------|
| HIV infection | 144 089 | 378.8       |
| AIDS          | 47 778  | 125.6       |

Table 9: UNAIDS Ukraine HIV and AIDS estimates 2020

|                                                          |         |
|----------------------------------------------------------|---------|
| Adults aged 15 and over living with HIV                  | 260 000 |
| Adult and children newly infected with HIV (2019)        | 9300    |
| Adult and child deaths due to AIDS                       | 3100    |
| People living with HIV who are on ART                    | 146 488 |
| Coverage of adults and children receiving ART (%)        | 57%     |
| Coverage of pregnant women who receive ARV for PMTCT (%) | 95%     |
| Early infant diagnosis (%)                               | 73%     |

As with TB, when access to HIV diagnostic and treatment programmes are disrupted, resistance can develop to medications, making the disease more difficult and expensive to treat. Access issues created by the hostilities also affect HIV prevention services (including prevention of mother-to-child transmission of HIV and harm-reduction services), laboratory testing, patient care, procurement and distribution of diagnostic materials and treatment. Early infant diagnosis, and patient retention and follow-up are made more difficult by population displacement, movement restrictions and an overburdened health system.

## Non-communicable diseases (NCDs)

NCDs are the leading cause of premature death (death occurring before the age of 70 years) in Ukraine, accounting for 91% of the total number of deaths. In 2020, cardiovascular disease (CVD) was the leading cause of death, accounting for two-thirds of all deaths. The next leading cause, cancer, accounted for approximately 13% of all deaths.

Table 8: 2020 Death rates for selected NCDs in Ukraine

|                         | Ukraine | % of all deaths | Per 100 000 |
|-------------------------|---------|-----------------|-------------|
| All deaths              | 616 835 | 100             | 1620        |
| CVD                     | 408 163 | 66              | 1072        |
| Cancer                  | 77 880  | 13              | 204         |
| Diabetes                | 2122    | <1              | 6           |
| Mental health disorders | 971     | <1              | 3           |

Access to essential health services, particularly primary health care, and medications are crucial for the treatment of NCDs, particularly prevalent in the older persons, many of whom have been unable to flee due to reduced mobility and means; there are over 10 million older persons in Ukraine. Without antihypertensive medications, patients are at greater risk of heart attacks and stroke; without insulin, some diabetic patients risk death from diabetic ketoacidosis (DKA); and without bronchodilators and oxygen, patients with chronic respiratory diseases will be unable to breathe.

### NCD Risk Factors

In 2019, a national survey of prevalence of major NCD risk factors utilising the STEPwise approach to surveillance (STEPS) methodology was conducted, which highlighted particularly high levels of salt and low levels of fruit and vegetable intake.

Table 10: Summary of NCD risk factors in the Ukrainian population from the WHO STEPS survey

| NCD Risk Factor                                             | % Overall population | % of Males | % of Females |
|-------------------------------------------------------------|----------------------|------------|--------------|
| Tobacco – Current smokers                                   | 33.9                 | 50.3       | 16.7         |
| Alcohol – Current drinkers of alcohol                       | 55.6                 | 66.1       | 44.6         |
| Fruits and Vegetables – Low intake of fruits and vegetables | 66.4                 | 73.2       | 59.4         |
| Salt – Salt intake of 5g or more per day                    | 86.9                 | N/A        | N/A          |
| Physical activity – Insufficient physical activity          | 10                   | 9.1        | 10.8         |
| Overweight                                                  | 59.0                 | 58.0       | 60.2         |
| Obesity                                                     | 24.8                 | 20.1       | 29.8         |
| Blood Pressure – Raised blood pressure                      | 34.8                 | 34.5       | 35.0         |
| Blood Glucose – Raised fasting plasma glucose               | 7.1                  | 6.7        | 7.4          |
| Cholesterol – Raised total cholesterol                      | 40.7                 | 40.6       | 40.9         |
| Multiple risk factors – Three or more NCD risk factors      | 32.8                 | 39.9       | 25.2         |

## Trauma

### Crisis-attributable casualties

Between 24 February and 2 March 2022, at least 752 civilian casualties had been confirmed, including 227 deaths (15 children) and 525 injured (28 children) (OHCHR – 2 Mar). For the same period, the MOH estimated over 2000 casualties; the real toll is likely higher. Between 2014 and the current escalation of the conflict, more than 14 000 people have been killed, including 3106 civilian men, women and children; and approximately 37 000 (7000 civilians) have been injured. Prior to the escalation, the majority of recent casualties were due to mines, unexploded ordnance and other explosive objects.

## Gender-based violence

Gender-based violence has long been a serious problem in Ukraine, with approximately 75% of women stating they had experienced some form of violence since age 15, and one in three had experienced physical or sexual violence. There is a lack of support available for victims, especially in former NGCA of Donetsk and Luhansk oblasts. Throughout the country, professionals in medical and state institutions lack the specific knowledge and skills needed to deal with survivors of torture and conflict-related sexual violence<sup>13</sup>.

## Technological and environmental health risks

### Technological hazards

Ukraine is a country with many active and formerly active industrial and mining sites, and oil refineries across the country, predominantly in the eastern part of the country. The country has multiple nuclear reactors and other radioactive sources, including the decommissioned Chernobyl nuclear power plant (NPP) site. Both its chemical and radio-nuclear sites might represent a major health risk if damaged during the ongoing conflict. The risk of accidental exposures to biological hazards is low as the country is not known (is not likely) to have collections of high consequence pathogens. The risk of disinformation and misinformation regarding these hazards is high.

As of the time of publication, Ukraine's operating nuclear power plants (NPPs) are operating normally. There are no violations of NPP safe operation limits and conditions. For the time being, no action from WHO is required with regard to radiation emergency risk. Close monitoring of the situation is ongoing.

### Extreme winter conditions

Ukraine experiences extreme winter weather conditions lasting from November to March, with temperatures dropping as low as -20°C. The impact of the conflict is felt even more during winter months; humanitarian needs are exacerbated due to freezing temperatures, frequent disruptions of water, gas, and electricity, and decreased food availability.

## Mental health and psychosocial support

The conflict-affected population is struggling to cope with physical and psychological trauma, as well as the socioeconomic effects imposed by the conflict situation. They require mental health and psychosocial support (MHPSS). Health care workers face overloading, understaffing and are at increased risk of psychological distress and mental health disorders as a result of witnessing traumatic events. There is generally low mental health awareness in Ukraine and stigma associated with mental illness. The MHPSS working group maintains [online maps](#) of MHPSS and prevention of GBV services and a list of hotlines available in Ukraine.

Mental health disorders are reported to affect one in five people in post-conflict settings (WHO estimates), while global prevalence is one in 14 (Global Burden of Disease (GBD) 2016<sup>14</sup>). In a study of conflict-affected adults in Ukraine, the prevalence of PTSD, depression and anxiety were 32%, 22%, and 17%, respectively<sup>15</sup>. Based on these estimates, out of the 18 million affected population, nearly 4 million adults and 1 million children are at risk of being affected by conflict-related mental health issues. Among adult IDPs, one in three is at risk of developing PTSD, resulting in nearly 1 million cases within the next four weeks.

## Determinants of health

### Water, sanitation and hygiene (WASH)

The conflict has caused significant infrastructural damage, leaving hundreds of thousands of people without electricity or water; poorly-maintained and dilapidated water and sanitation infrastructure will be a further impediment to

<sup>13</sup> <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=21187>

<sup>14</sup> F. Charlson et al. New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis, *Lancet* 2019; 394: 240–48

<sup>15</sup> B. Roberts et al. Mental health care utilisation among internally displaced persons in Ukraine: results from a nation-wide survey. *Epidemiology and Psychiatric Sciences*, 2017.

reconstruction. In addition to individual consumption and hygiene, water is also an essential resource for electricity production and centralised heating in the area; 81% of heating in the region uses water-based systems. The COVID-19 pandemic has intensified the needs for water supply, solid waste and medical waste management, and hygiene. The [WASH Cluster](#) is led by UNICEF.

### **Food Security**

The ongoing hostilities continue to disrupt local supply chains and access to food and other basic items. In eastern Ukraine, there are reports of food shortages in Kramatorsk (Donetska oblast) as supplies were mostly coming from Kharkiv. Even before 24 February, the escalating tensions in Donetska oblast had already damaged roads and bridges that subsequently limited access to markets for food. Around 400 000 people were already estimated to be severely and moderately food-insecure in eastern Ukraine. Food insecurity is projected to rise considerably, as more and more people are displaced, where access to food, and possibly even supply, will continue to be a challenge. The [Food Security Cluster](#) is led by FAO.

### **Shelter**

Damage to residential and public infrastructure due to the conflict is now wide-spread across Ukraine, but the full-extent is still unknown. Active hostilities, insecurity, damage to dwellings and disruptions to utilities, such as gas, water, central heating systems and electricity are impacting their living conditions. Sheltering from the cold in the winter season in Ukraine is essential; disruptions to utilities and access barriers to solid fuel (e.g., wood, coal) are currently placing the health of thousands of people at risk. For example, damage to infrastructure has reportedly left 400 000 people without electricity in Donetsk and Horlivka on both sides of the line of contact (LoC). In another instance, more than 40 000 people around Horlivka remain without access to water.

Frequent attacks have forced many people to seek temporary shelter in basements, bomb shelters, and metro stations underground with poor ventilation, heating, provisions, and access to sanitation. Many people have left their homes and travelled to other parts of the country; most are sheltering in private accommodations and/or with families. Across the borders in neighbouring countries, humanitarian partners and governments are scrambling to set-up temporary shelters and provide emergency supplies to refugees.

### **Security**

The escalating insecurity affects the capital, Kyiv, and at least eight oblasts (regions) and a vast area of Donetska and Luhanska oblasts, as well as multiple new locations referred to as “newly impacted areas”, including but not limited to Kyivska, Kharkivska, Khersonska, Mykolaivska, Odessa, Sumy, and Zhytomyrska oblasts.

Security risks include systematic shelling close to civilian property and utility infrastructure, and heavy presence of military in densely populated areas. Additionally, Ukraine ranks fifth in the world for civilian landmine and ERW casualties, and in the top three for antivehicle landmine accidents, with severe mine and explosive remnants of war (ERW); more than 10 000 landmines have been observed. The [Protection Cluster](#) is led by UNHCR.

### **Restriction of Movement**

Active conflict continues to prevent humanitarian actors from accessing vulnerable populations. Humanitarian corridors are being negotiated to facilitate the safe movement of supplies and personnel. Martial law and curfews impose movement restrictions, limiting access to health services, essential medicines, and market goods.

In certain areas, including in Kharkiv and Mariupol, the population reportedly cannot leave the areas of active fighting, encircled by armed forces, as well as due to roads that are damaged or obstructed with unexploded ordinance. A 427km-long line of contact (LoC), runs through Donetska and Luhanska oblasts in eastern Ukraine, which formed a border between Government-Controlled Areas (GCA) and armed non-state actors, collectively known as Non-Government-Controlled Areas (NGCA) prior to the escalation of the conflict. This line is being redrawn. The political separation of GCA and NGCA has caused significant constraints to the movement of people and goods for the past eight years. Along the LoC, there are seven entry exit checkpoints (EECPs) allowing humanitarian and civilian movement. UNHCR maintains a monitoring [dashboard](#) for the checkpoints.



## ACCESS TO HEALTHCARE

- Access to health services, essential medicines, and market goods is limited by security concerns and movement restrictions related to the hostilities and the imposed martial law and curfews.
- Based on the shifting context, more than 200 health facilities have found themselves along conflict lines or in changed areas of control.
- Many isolated settlements do not have pharmacies or medical centres.
- Barriers: active hostilities, martial law (curfew), medicine (availability, access to pharmacies, cost), health care facilities (distance, damage to roads, transportation, lack of mass transport, fuel shortages, restricted movement through military checkpoints, safety concerns in facilities, lack of specialized beds and equipment, few disability accommodations, limited telemedicine, health workforce shortages, inadequate information systems, poor patient satisfaction.



## DAMAGE TO HEALTH FACILITIES

An unknown number of facilities have suffered damage due to hostilities. Prior to the escalation of conflict, many were in degraded condition from lack of maintenance and reported medical equipment in disrepair.



## DISRUPTION TO SUPPLY CHAIN

The supply chains for medicines, medical supplies, and common goods have been disrupted, creating urgent need. Many distributors are non-operational and many government and humanitarian stockpiles are inaccessible due to active hostilities.

Lifesaving and essential medicines, such as life-sustaining oxygen and insulin, personal protective equipment (PPE), surgical supplies, anaesthetics, safe blood products are reported in short supply.



## ATTACKS AGAINST HEALTH

One Confirmed incident - verified and published on [Surveillance System for Attacks on HealthCare](#)

- Hospital attacked with heavy weapons
- Casualties: 4 deaths and 10 injuries, including 6 health care workers

Over 20 other incidents currently being verified.

## Health system status

Improvements in the provision of effective, essential health services has stalled in Ukraine, with only modest improvements in recent years, from 54% in 1990 to 57% in 2019. The COVID-19 pandemic has made the health system more fragile and more inaccessible to patients. Health care facilities have had to shift available resources and trained personnel to the COVID-19 response. This has limited other essential medical services, including HIV/AIDS and tuberculosis programmes, safe delivery and new-born childcare, routine childhood vaccination programmes, dialysis and treatment of other chronic diseases requiring continuous care in health facilities.

The Ministry of Health (MoH) and National Health System of Ukraine (NHSU) continue to operate, but humanitarian access across borders is still being negotiated. Health p

## Health Facilities

Number of hospitals: 1630

Primary health care facilities (PHCFs): 10 140; 6964 in rural settings.

Health facilities are now focused on treating trauma patients. PHCFs are not evenly distributed within oblasts, which results uneven coverage of essential health care services, especially in the rural and remote areas.

## Health Workforce

Healthcare sector workforce: 735 000 (12/2020) (83% women)

Doctors: 147 361 (as of 2020); ~36 physicians per 10 000

Primary health care doctors: family doctors: 16 139; paediatricians: 5161; therapists: 3760

Primary health care providers: 2200; 5.78 per 100 000 population.

According to the State Statistics Service of Ukraine, 735 000 workers were employed in the health care sector as of December 2020. Women represent 83% of health care workers. The density of the health workforce varies across Ukraine, for instance the density of doctors varies from 27 to 50 per 10 000 population between the oblasts. Prior to the conflict escalation, along the line of contact in Donetsk and Luhansk oblasts, there was a shortage of medical staff (from 20% to 40% depending on the settlement), and about 60% of available primary care physicians are of pre-retirement and retirement age.

## Humanitarian health response

### 73 HEALTH PARTNERS

#### Health response coordination and health actor response

All previous humanitarian activities in Ukraine have been suspended. The Health Cluster, led by WHO, prior to the conflict escalation, linked 73 partners (NGOs, UN agencies, national authorities, donors, and observers) engaged in the humanitarian health response in Ukraine; 23 partners had operational presence as of December 2021 (see map below). The Health Cluster secretariat gathers and disseminates relevant information to guide partner response; identifies and addresses gaps in technical knowledge to ensure global best practices and standards are followed; and promotes and advocates for humanitarian health action.

The UN and its humanitarian partners are preparing to rapidly scale-up operations once the security situation permits and mobilize emergency financing to facilitate an effective, broad and timely humanitarian response in Ukraine. In the meantime, organizations with an existing operational presence in areas affected by the new wave of hostilities have been able to provide some humanitarian assistance to affected people.

The Health Cluster maintains a log of requests for humanitarian assistance and the partners who are responding, visible through the web-based [Health Cluster Referrals Tracking Tool](#), currently being improved to better respond to the current

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## Information gaps / recommended information sources

|                                                            | Gap                                                                             | Recommended tools/guidance for primary data collection                                                                                                                                                  |
|------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Health status &amp; threats for affected population</b> | Mortality - disease-specific                                                    | Census; facility-based surveillance                                                                                                                                                                     |
|                                                            | Sexual and reproductive health – STIs, maternal health indicators, GBV capacity | Facility-based surveillance and/or assessments                                                                                                                                                          |
|                                                            | Child health - malnutrition data                                                | Anthropometric survey, desk-based nutritional risk assessment                                                                                                                                           |
|                                                            | Hepatitis B & C - incidence/prevalence/mortality                                | Facility-based morbidity and mortality data                                                                                                                                                             |
|                                                            | Waterborne diseases – incidence/prevalence data                                 | Facility-based morbidity and mortality data; analysis of laboratory surveillance data; routine environmental monitoring                                                                                 |
|                                                            | NCDs - incidence/prevalence data                                                | Survey to measure point prevalence of chronic diseases; facility-based morbidity and mortality data                                                                                                     |
|                                                            | Environmental health - impact data                                              | Facility-based morbidity and mortality data; environmental health assessments                                                                                                                           |
|                                                            | Mental health - incidence/prevalence/treatment data                             | Query mental health symptoms as part of facility-based surveillance and general health surveys, services mapping, participatory assessment                                                              |
| <b>Health system needs</b>                                 | People with disabilities – health data                                          | Facility-based morbidity and mortality data                                                                                                                                                             |
|                                                            | Damage to facilities and equipment                                              | Facility site assessments; monitoring and analysis of requests for assistance                                                                                                                           |
|                                                            | Medical equipment and supplies                                                  | Facility audits and spot checks, monitoring and analysis of requests for assistance                                                                                                                     |
|                                                            | Workforce                                                                       | Facility reports                                                                                                                                                                                        |
| <b>Humanitarian health system performance</b>              | Utilisation of health services                                                  | Facility-based morbidity data; coverage survey, comparison of actual programme outputs vs. target beneficiaries; focus groups, other qualitative methods for exploring service utilisation and barriers |
|                                                            | Quality of health services                                                      | Facility-based morbidity and mortality data; facility audits and spot checks, patient exit interviews                                                                                                   |
|                                                            | Laboratory surveillance system                                                  | Laboratory assessments                                                                                                                                                                                  |

## Key references

1. [OCHA, Ukraine Humanitarian Needs Overview 2022, Feb 2022.](#)
2. [OCHA, Ukraine: 2022 Humanitarian Response Plan, Feb 2022.](#)
3. [OCHA, Ukraine Situation Report.](#)
4. Health Cluster Ukraine, PHSA – Eastern Ukraine – [short form](#), [long form](#), 7 Feb 2022.

Additional references available upon request.

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