War is a humanitarian crisis in disguise that upsets communal harmony and promotes violence, terrorism, social injustice, and exclusion. It leads to a health crisis that which pushes the conflicting countries to their limits. As the full-scale Russian aggression intensified in Ukraine, more than 4 million people have fled their homeland within the first month of the war and have triggered a large refugee crisis with impacts far beyond the Ukrainian border. People in the neighboring countries have shown tremendous support by stepping forward to donate food, clothes, medications, money, and other essential supplies. The governments and other regional stakeholders have also been supportive in accommodating and easing regulations for the incoming refugees. Herein, we summarize the humanitarian measures and medical donations that have been made by European countries as they stepped up their efforts to provide refugees with all necessary basic services. We further highlight potential oncoming challenges in Ukraine and the host countries along with relevant solutions to these challenges. The current scenario highlights the need for multi-party and multi-level collaborations (both public and private) to tackle the emerging situation.

Keywords
- crisis, Covid-19, humanitarian aid, medical aid, Europe, Ukraine, war

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Europe was still fighting and recovering from the disastrous Omicron-led Covid-19 wave.

In the wider Trans-Atlantic context, the stressors associated with the Covid-19 pandemic have been compounded with the stressors of an armed conflict (so-called “Special Military Operation”). These unprecedented back-to-back events have taken all the western countries afoot and have limited their ability and capacity to provide the necessary aid, both in terms of materials and manpower. The EU Commission has pledged to support humanitarian efforts by providing food, water, healthcare services, and shelter to fleeing Ukrainians. The Commission on 4th March 2022 activated the “Temporary Protection Directive (TPD)” which stipulated the provision of residence permits, access to employment, access to education for minors, opportunities for family relocation, and social welfare to Ukrainians in any EU member state.

Four days later, on 8th March 2022, the Commission also adopted the “Cohesion’s Action for Refugees in Europe (CARE)” legislative that enabled the relocation of funds to support humanitarian efforts. Multiple teams from the World Health Organization (WHO), United Nations (UN) agencies, and The International Federation of Red Cross and Red Crescent Societies (IFRC) have actively provided support in Ukraine and neighboring countries to transport people, provide first-aid, distribute relief items, and help in basic training. In Hungary, Poland, Moldova, Romania, and Slovakia, the IFRC had rescue teams and centers at the border posts that helped the incoming refugees.

The public support has been tremendous with thousands providing housing, medical assistance, food, water, clothing, blankets, diapers, strollers, and hygiene products to the Ukrainian refugees. The governments too had waived many Covid-19 related restrictions for the refugees as they prepare for a greater refugee influx (Table 1).

European countries have been unitedly providing financial support and relief materials to the Ukrainian government and NGOs working in Ukraine. The countries have also introduced several humanitarian services to the Ukrainian refugees that have entered their borders including:

1. Free basic healthcare check-ups, medical and dental services, and psychological consultations.
2. Free treatment of injured military personnel.
3. Free prescription medicines with valid prescriptions issued either in the host country or Ukraine.
4. Mobilization of medical teams to the border posts for screening of people and their pets.
5. Setting up regional information centers, helpline numbers, and dedicated websites in Ukrainian and Russian languages.
6. Providing one-time financial payments for incoming refugees and host families.
7. Free use of public transportation (buses, trains).
8. Preschool and school enrollments for students.
9. Provision of guardianships and temporary custody for unaccompanied minors etc.

Multiple EU universities have supported their Ukrainian students by offering them scholarships, accommodation fee waivers, temporary accommodation for family, or psychological counseling. Many European private companies have helped Ukrainian refugees and people in Ukraine, including airlines that provided free and/or discounted fares to Ukrainians. Several companies have donated/transported humanitarian aid free-of-cost from across Europe.

Despite the efforts and measures implemented thus far, there remain substantial logistical, legal, and organizational challenges to effectively tackle the oncoming challenges. According to the estimates by the International Organization for Migration (IOM), close to 6.5 million Ukrainians have been displaced internally between 9th and 16th March 2022 with 53% of the displaced being women.4 Even before the Russian invasion, Ukraine hosted the ninth-largest internally displaced population (IDP) worldwide.5 Multiple reports in the past have presented the records of IDPs facing

|                      | Czechia | Hungary | Moldova | Poland | Romania | Slovakia |
|----------------------|---------|---------|---------|--------|---------|----------|
| Covid-19 negative PCR exemption | Yes     | Yes     | Yes     | Yes    | Yes     | Yes      |
| Covid-19 vaccination certificate exemption | Yes     | Yes     | Yes     | Yes    | Yes     | Yes      |
| Covid-19 testing and vaccination service | Yes     | Yes     | Yes     | Yes    | Yes     | Yes      |
| Identity document exemption | No      | Yes     | No      | Yes    | No      | Yes      |
| State of emergency declared due to war situation | Yes⁴ | No⁵ | Yes⁴ | No | No | Yes⁴ |
| Provision to seek asylum | Yes     | Yes     | Yes     | Yes    | Yes     | Yes      |
| Possibility to continue university education and/or teaching | No      | Yes     | Yes     | Yes    | No      | Yes      |
| Free food and accommodation in hotels, resorts, etc. | Yes     | Yes     | Yes     | Yes    | Yes     | Yes      |

⁴Moldova declared a 60-days state of emergency on 24th February 2022. Slovakia declared a special state of emergency on 26th February 2022 whilst the previous 1 related to the Covid-19 pandemic was still in effect whilst Czechia had announced a state of emergency on 3rd March 2022.

⁵Hungary was in a state of emergency due to the Covid-19 pandemic till June 1, 2022.
targeted killings, beatings, abduction, bombardment, and assault carried out by both Russian and Ukrainian forces. Apart from the IDPs, another group of vulnerable population is the stateless people (people who aren’t considered nationals by any country), with UNHCR (United Nations High Commissioner for Refugees) estimating 40,000 such people residing in Ukraine. Such stateless people and their descendants are either possessing Soviet passports or were never issued Ukrainian birth certificates. This prevents them from accessing the labor markets, medical facilities, legal representation, and educational opportunities. Lastly, Ukraine also hosted more than 5,000 refugees and persons with complementary state protection, the fate of whom still hangs in doubt. All these vulnerable populations are extremely risk-prone to experiencing housing insecurity, family separation, unemployment, addiction issues, and mental health disorders.

The situation within the country’s boundaries also seem to deteriorate as the conflict stretches. Multiple medical facilities have been under direct attack and forced to move into underground bomb shelters including maternity and pediatric units. They are faced with a critical shortage of oxygen, essential medications, insulin supplies, and cancer medications. In cities with intense fighting, reports of interruptions in electricity and water supplies have also been reported, which limited the capacity of the healthcare system to function properly. Furthermore, due to the difficulties in intra-country movements, appropriate expert supervision may not be accessible to those in need. Then there are increased risks of rapid spread and outbreak of infectious diseases including Covid-19 due to broken surveillance chains. From a patient’s perspective, the dangers associated with going out could naturally deter them from seeking appropriate medical attention, leading to excess mortality rates.

Outside of Ukraine, multiple host countries have found it difficult to process the influx and to provide them with suitable accommodations. Integration of the refugees into the mainstream life is an equally daunting challenge. Though TPD addresses some legal aspects of integration, the burden on the educational systems and labor market needs to be addressed. Language barriers, qualification equivalency, curriculum differences, etc., are short-term challenges that need to be addressed. The financial support offered by some countries is certainly not enough to support the refugees in the host countries in the long run. People with relatives and/or friends in Ukraine have been mentally and emotionally disturbed.

This unique situation highlights the need for multilateral cooperation to address both the short- and long-term challenges. In the near-future, urgent steps need to be implemented and supported by countries and organizations to support the mutual agreement between the conflicting parties to scale back and cease hostilities against civilians. Measures should be agreed upon by conflicting states to provide an uninterrupted supply of food, water, electricity, sanitation, and internet connection. The principles highlighted and agreed upon in international agreements including UNHCR CRRF (Comprehensive Refugee Response Framework or New York Declaration), Geneva Convention, and others should be respected and implemented. Soldiers and journalists who were and will be captured and/or those who have or will surrender should be treated humanely in line with the international bylaws.

In the digital age of the 21st century, an equally relevant measure is to not fall for social media misinformation campaigns and slogans. People should rely on reliable information sources only and refrain from endorsing inflammatory hate speech. Family reunifications should be prioritized along with implementing provisions for granting temporary identity documents to the stateless and refugee populations in Ukraine. Localized approaches toward screening the vulnerable and affected populations for anxiety disorders should be undertaken. Online short-courses, guides, manuals, etc., can be published to help people how to recognize and approach the Good Samaritans along with the establishment of free hotline services. Dedicated help hotlines for women and children should be established. War crimes including murder, abduction, sexual assault, etc., should be registered appropriately within the legal framework and affected individuals should be rehabilitated. Systematic registrations of the internally displaced should be done along with providing them with appropriate rehabilitation therapies.

Quick response and standard patient first-aid in war-torn situations could prove to be lifesaving and are critical for ensuring the survival of society and its functioning. First-aid and CPR (cardiopulmonary resuscitation) training could be provided using online and offline resources. Additionally, telemedicine and video-supported medicine (VSM) should be adopted with appropriate training being provided to present and future doctors. Mobile medical units with community helpers, air-ambulance systems, rescue teams, etc., can be formed to reach, aid, and evacuate the distressed people. To prevent the spread of infectious diseases, prophylactic vaccinations and boosters should be administered to vulnerable groups. A reliable supply of essential medications and supplies should be established and secured from other countries and measures for inclusive and equitable distribution without any discrimination should be implemented. Make-shift hospitals, day-care centers, nursing centers, and doctor outposts can be established in the most-affected regions.

Another critical pillar in a war situation is the resilience of the medical support system that is specifically dedicated and reserved for the support of combatants. Capable and technologically advanced medical support for combatants can help dramatically cut the combat fatality rates during
and after the conflicts and boost morale. According to the Defence Reform Action Plan (DRAP) 2016 to 2020, a new Medical Force Command (MFC) in the Ukrainian Armed Forces was created to specifically meet the objectives of providing medical and psychological care, performing medical evacuations, and screening and treating all personnel involved in the security and defence sector of the country. Around 1.2 million active and retired service members along with their families were estimated to have received support from MFC in 2020.\(^\text{11}\) In terms of infrastructure, the MFC has 7 sanatoriums and medical rehabilitation facilities with a total bed capacity of 2050 beds. In the Joint Forces Operation (JFO) regions in Ukraine (Donbass region) the ministry reported the availability of individual first-aid kits and medications for 120% and 72% of the available personnel, respectively. This relative shortfall in the medications like antivirals, antibiotics, bandaging material, cardiovascular drugs, etc. could prove to be decision-making in the current war scenario.

Nonetheless, the Ukrainian government has been making progress in improving and implementing national medical support guidelines in the armed forces. The government published an additional nine medical support documents between 2016 and 2020. These documents accounted for the provisions and implementation of NATO (North Atlantic Treaty Organization) standards.\(^\text{11}\) Additionally, it procured more than 180 armored medical vehicles and ambulances from 2019 to 2020 for bolstering the MFC. A special course on medical psychology was established to be taught at the Ukrainian Military-Medical Academy along with the introduction of stress-coping aid, a form of psychological rehabilitation program for the military personnel which has benefited over 42,000 service members.\(^\text{11}\)

In the longer-term medical students could be encouraged to play a bigger role during such conflicts. Unfortunately, the current curriculum is not designed to train civilian medical students to act in such situations, even though civilian medical students and doctors are expected to double up as military doctors in crisis. For this, medical students should be given opportunities for voluntary service in disaster zones as interns or assistants, to allow them to understand their physical and mental responses and potential risk factors for negative outcomes.\(^\text{12}\) A specific course on conflict and disaster management in medicine should be incorporated into regular curricula with a focus on the identification, management, and appropriation of vulnerable populations and resources. A briefing should also be provided before the students are sent out in the field highlighting their specific tasks and roles.\(^\text{12}\) Similar strategies can be implemented for nurses, mental health counselors, dentists, and social workers. These measures would increase the situational awareness of students and decrease the mobilization and responding time.

However, it is important to note that implementing such a strategy will require addressing multiple ethical and legal challenges. We suggest that governments, international organizations, universities, and student representatives chart out an acceptable plan-of-deployment for healthcare students in conflict zones, along with making such participation voluntary and consented.

Finally, the situation across the border in Russia needs to be equally highlighted. Several protesters have been voiced down for their support for Ukraine and anti-war calls. More than 5000 people have been detained in various cities across the country. On 4th March 2022, the Russian Federation enacted two controversial censorship regulations which criminalized independent war reporting and supporting anti-war calls. The individuals could be subjected to cash penalties and 15 years of sentencing in case of breach of these regulations. The increasing number of sanctions on Russia have threatened to set back the many years of scientific and medical cooperation between communities, as institutions find it difficult to stay neutral and calls for scientific sanctions increase.\(^\text{13,14}\) Additionally, Russian minority populations and tourists across the globe are becoming more insecure by the day as they face increasing societal stigmatization, pressure, and judgment.

**Conclusions**

Since the beginning of the Covid-19 pandemic, people experienced elevated levels of physical, mental, and emotional stress. The Russo-Ukrainian war has become an additional source of fear and emotional instability. Despite the distressing environment, communities have remained unified and efficient as they showcase the European principles of solidarity and humanitarianism.

International organizations like WHO, UN agencies, IFRC, NGOs, etc., should establish communication networks amongst themselves and other players to unitedly respond to calls for humanitarian assistance. Governments should work toward an early resolution of the conflict and immediate cessation of hostilities from both sides. Appropriate training and resources should be made available to the local volunteers and Good Samaritans along with the establishment of hotlines and mobile medical teams and aiding other organizations.

The host countries have been extremely supportive of the incoming refugees and have enacted multiple short-term immediate measures to support the refugees. Long-term measures for the integration of the refugees into local communities remain a critical challenge. Furthermore, these countries are burdened to act as passageways for evacuations, and transportation of goods and critical essential supplies in and out of Ukraine. These logistical challenges and management of resources both in terms of manpower and
materials would need a coordinated multi-level and multi-party cooperation between all stakeholders.

In the context of the present conflict, the establishment of a fine mutually supportive balance between military and civilian medical systems is urgently required, for it can profoundly determine the course of the war.

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Author Contributions

NJ conceptualized the report, whilst all authors were involved in the data collection and preparation of the manuscript. Supervision was done by SJ and AR. Project management was done by NJ. All authors have read and agreed to the final version of the report for publication.

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