Hybrid warfare and public health: Conflicts in Ukraine and Nagorno-Karabakh raise the alarm

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ABSTRACT

Hybrid warfare strategies include weaponization of healthcare, the use of non-conventional weapons, and strategic displacement of civilian populations via direct targeting, sexual violence, disinformation campaigns, and disruption of essential services such as water, food, gas, and access to health services. All these actions harm public health. The current war in Ukraine and the 2020 Second Nagorno-Karabakh war between Azerbaijan and Armenia serve as vivid examples of the novel and devastating public health effects of hybrid warfare targeting civilians. The lessons learned from these conflicts should serve as a warning and a call to action. Politicians and public health officials should advocate for a comprehensive rethinking of previous measures to counteract the impacts of hybrid warfare. Concerted efforts and strategies to mitigate these impacts on public health at every phase are essential. De-escalation of conflicts should be facilitated, and civilian health should be prioritized by the global community by instituting a more punitive and comprehensive schema to both deter war and step-up penalties for the tactics of hybrid warfare. Failure to do so will undoubtedly result in this scenario being played out with greater frequency globally, erasing the public health wins of the previous century.

The consequences of war on public health are manifold and well-documented. They include outbreaks of infectious disease, injuries and deaths for soldiers and civilians, population displacement, and destabilization of essential health resources such as food, water, and sanitation [1]. Conflict impacts not only direct survival, but the systems that contribute to health and safety. In the past, Geneva Convention guidelines were drafted in order to protect civilian populations. The landscape has drastically changed with the advent of hybrid war. The definition of hybrid warfare is not unanimously accepted but can be seen as warfare involving conventional and non-conventional strategies with blatant disregard for civilian lives [2]. In this scenario, Geneva Convention guidelines are increasingly ignored or circumvented by the absence of provisions specific to these tactics. The war in Ukraine is the latest example of how hybrid war targeting civilians harms public health. Hybrid warfare brings a new era of health concerns that run the risk of unmitigated escalation. Hybrid war can damage health through use of unconventional weapons, sexual violence, military targeting of healthcare facilities and workers, forced depopulation, and sabotage of essential resources and nutrition sources, which all destabilize civilian populations.

Unfortunately, hybrid warfare is not unique to Ukraine. Similar tactics were used in the 2020 Second Nagorno-Karabakh War between Azerbaijan and the Autonomous Republic of Artsakh. Both wars center around restoring territory from the Soviet Union and involve long-lasting historical conflicts. However, the war in Ukraine has played out on a broader scale, targeting a larger population and causing more human displacement, creating even greater potential impacts on global public health. While the Nagorno-Karabakh war lasted six weeks, the Ukraine conflict shows few signs of abating at the time of this writing. In both Ukraine and Nagorno-Karabakh, the lessons of hybrid war illustrate trends in its unique impact on public health.

Hybrid warfare includes weaponization of healthcare, or intentionally limiting access to healthcare as a military strategy. In the past, a red cross on the roof of the building signaled to pilots to avoid bombing, but in hybrid warfare it serves as a target. There have been numerous documented attacks on health care facilities in Ukraine since the invasion, resulting in many injuries and deaths, and disrupting essential care. Similar healthcare disruption and weaponization strategies were employed in Nagorno-Karabakh in 2020. Attacks on public health resources including maternity hospitals, ambulances, and healthcare
workers limited access to emergency care and medical treatment for non-emergent conditions [3].

The hybrid warfare strategy of attacking Nagorno-Karabakh during the COVID-19 pandemic particularly challenged public health. The healthcare system of neighboring Armenia, already over-taxed by the COVID-19 pandemic, was placed under further pressure as refugees fled there from Nagorno-Karabakh. Overcrowding in shelters caused by displacement likely worsened the pandemic’s spread. Although the Russo-Ukrainian war broke out while the pandemic was more controlled, Ukraine has also experienced worsened COVID-19 impacts and increased spread of infectious diseases including cholera and diarrheal diseases, as well as chronic diseases and injuries [4].

Hybrid warfare strategies include use of non-conventional weapons. In Nagorno-Karabakh, such weapons were used on civilians, forcing migration by rendering dwellings unlivable. Drones, cluster bombs, landmines, and phosphorus bombs were used indiscriminately in residential areas [5]. Roads and bridges were bombed, making escape and healthcare access impossible. These unconventional weapons and strategies are being used on a wider scale in Ukraine; concerning the takeover of Chernobyl and again with the bombing of the Zaporoizhzhia nuclear reactor raise the specter of destruction by nuclear contamination. During the Nagorno-Karabakh war, this came as a threat to hit the Medsamor nuclear power plant. The danger of nuclear contamination threatens health via acute radiation syndrome, which can result in death and increased risks of cancer that persist for decades, as well as soil contamination that furthers food insecurity.

Wars have historically impacted mental health, causing anxiety, PTSD, depression, and complicated grief. The direct targeting of civilian populations intensifies these impacts. Children in Nagorno-Karabakh have exhibited significant mental health challenges resulting from the war, including struggles with peer relations, attention, and learning [6]. Stressors related to war can also create intergenerational trauma. These threats can further depopulate an area and harm mental health and physical security. Many Ukrainian refugees will also require mental health services to process war experiences. This underscores the importance of combating the health impacts of war before lifelong damage occurs.

Organized sexual violence against civilian populations is another hallmark of hybrid warfare. Its effects are extensive: over three quarters of survivors in one study experienced high rates of health issues including infertility, chronic pain, genital injury, substance abuse, suicide, and sexually transmitted infections [7]. Sexual violence during war can lead to community displacement, reduced access to mental health care, forced pregnancies, and economic challenges. Survivors often experience stigmatization and long-term disruptions of family and community relationships [8]. The Nagorno-Karabakh war was mercifully spared from organized campaigns of sexual violence due to less hand-to-hand combat and rapid evacuation of women and children. The war in Ukraine has presented a more harrowing lesson. Sexual violence has been used as a weapon to weaken the civilian population. The invasion of Ukraine quickly resulted in apparent increases in human trafficking and reports of sexual violence.

Supply of essential resources including water, food, and electricity is critical for civilians and the crops they cultivate. Water resources in Nagorno-Karabakh heavily impacted the war and Azeri-Armenian relations; the battle over the Black Lake and hydroelectric power stations is worth noting. Contaminating or restricting water supply, strategies used during the war, can impact health via sanitation and food availability. Troops frequently kidnapped cattle or people, causing insecurity and driving displacement. Similarly, the war in Ukraine has created severe danger to public health by leaving many citizens struggling without essential resources, such as access to vital crops. The effect of the war in Ukraine has global consequences for food insecurity. Russia and Ukraine produce 12% of the world’s calories, nearly a third of the world’s traded wheat, and a large amount of its fertilizer [9]. The war in Ukraine has also resulted in high price volatility of other commodities like coal and oil, threatening the global economy.

Hybrid war can be seen as a battle of war crimes with systemic targeting and destruction of civilians and infrastructure. War in Ukraine and Nagorno-Karabakh serve as examples of its grave health consequences, providing lessons for future directives. Solutions can be impactful over four distinct phases: pre-conflict de-escalation and deterrence to avert war, early warning protocols and timely detection systems to allow for safe evacuation of civilians, mitigation during conflict including attention to medical and mental health needs on the ground and in refugee populations, and post-conflict rebuilding and swift prosecution for violations of the accepted principles of war. The damage hybrid war has inflicted necessitates rapid and decisive action at every phase.

Data are the key to inform policy and direct resources, but quantitative analysis in this area is sparse [10]. Direct impacts of war on disease are perhaps the most concrete, and attacks on healthcare facilities and workers are essential to track. Satellite imagery data can document attacks and migration, but the chaos of war may disrupt measurement strategies. Data monitoring of infectious disease is critical but challenging in conflict zones. Locating displaced people and having medically trained boots on the ground to document and intervene on the sequelae of sexual violence, mental health concerns, and acute and chronic health issues gives insight into disease burden. Use of non-conventional weapons must be reported so enforcement efforts are applied. Evidence must be investigated and documented by international bodies and observers. The International Committee of the Red Cross (ICRC) has undertaken this work, using data to aid those in conflict zones, along with Researching the Impact of Attacks on Healthcare (RIAH) and The Conflict Observatory Project. Physicians for Human Rights (PHR) has documented attacks on healthcare facilities and workers, facilitating possible future prosecution. Including a public health lens to this documentation is essential to inform mitigation efforts.

A strategy for addressing hybrid warfare globally and equitably should be on the radar of agencies, politicians, and public health professionals worldwide. Its long-term public health consequences and intentional damage to civilians must be acknowledged and acted upon so they can be effectively redressed by the international community. Politicians and public health officials should advocate for a comprehensive rethinking of previous measures to ensure that guidelines of international humanitarian law and the Geneva Conventions no longer go unanswered. If de-escalation fails, the international community and funding agencies must participate financially and logistically to reconstruct and strengthen systems. Civilian health and right to life must be respected by combatants and the global community. Failure to do so will mean this scenario will be played out with greater frequency globally. The line between combatant and civilian deaths has been blurred. Hybrid war’s impact on morbidity and mortality is an avoidable erosion of the public health gains of the previous century. As a new world order is created, let us not forget to safeguard global health.

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