EXPLOSIVE ORDNANCE RISK EDUCATION IN Ukraine DURING THE COVID-19 PANDEMIC

All modern conflicts bring dangers of explosive remnants of war (ERW), including unexploded ordnance (UXO), abandoned explosive ordnance (AXO), improvised explosive devices (IEDs), and/or landmines, and the conflict in eastern Ukraine is no exception. While the conflict is still ongoing, it is currently in a state of relative stalemate, limited to shelling, sniper fire, and small skirmishes along the 280-mile line of contact.[1] However, civilians are still directly at risk as a result of military actions but also indirectly as a result of ERW and landmines, which are scattered across the region due to the frequent shifting of the line of contact that occurred during the early stages of the conflict. Kicked-out munitions from unplanned explosions at ammunition stores also pose a threat to civilians across the country.

ERW contamination is now a major problem in the Donetsk and Luhansk regions of eastern Ukraine, and an estimated 3.4 million people are at risk of ERW and landmines, including over 490,000 children.[2] While an increasing number of government agencies and nongovernmental organizations have been addressing the issue since the beginning of the crisis, recent risk education (RE) efforts have been hampered by the ongoing COVID-19 pandemic, which has heavily affected Ukraine.[3] The HALO Trust (HALO) has been working in Ukraine since the end of 2015 and conducting RE sessions since 2016. With support from the United States, United Kingdom, European Union, the Netherlands, Finland, Switzerland, and the United Nations Children's Fund (UNICEF), HALO has conducted over 6,600 RE sessions over the past five years at schools, kindergartens, places of worship, workplaces, community centers, and individual households to raise awareness of the dangers of ERW and landmines. During the pandemic, HALO successfully transitioned to a hybrid approach to explosive ordnance risk education (EORE), including continued in-person seminars, where permitted, and online educational sessions. HALO also successfully tested the viability of using virtual reality (VR) for this aspect of humanitarian mine action (HMA). This article explains the path HALO has taken to be able to continue to provide effective RE to civilians in eastern Ukraine despite the COVID-19 pandemic.

The Ukraine Context

HALO has identified 317 hazardous and contaminated sites, totaling over 28 sq km of contamination including mines, UXO, and IEDs in eastern Ukraine from the recent conflict. Non-technical survey is, however, still ongoing. As of 26 May 2021, HALO has recorded 2,419 casualties from mines and ERW in eastern Ukraine, of which 1,040 were civilians. The presence of mines and UXO not only presents a deadly threat to civilians but also restricts their freedom of movement and limits economic and educational opportunities by inhibiting access to cultivable land and educational institutions. While the majority of threats lie in Luhansk and Donetsk regions, the explosion of ammunition stores and warehouses in the neighboring Kharkiv, Zaporizhzhia, and Dnipropetrovsk regions have also contributed to the threat from UXO in Ukraine.

The COVID-19 pandemic has severely affected the populace of Ukraine and has impacted many areas of HALO's efforts towards alleviating the second-order effects of the crisis on the civilian population. As of September 2021, Ukraine has recorded more than 2 million cases of COVID-19 with over 53,000 reported deaths.[4]

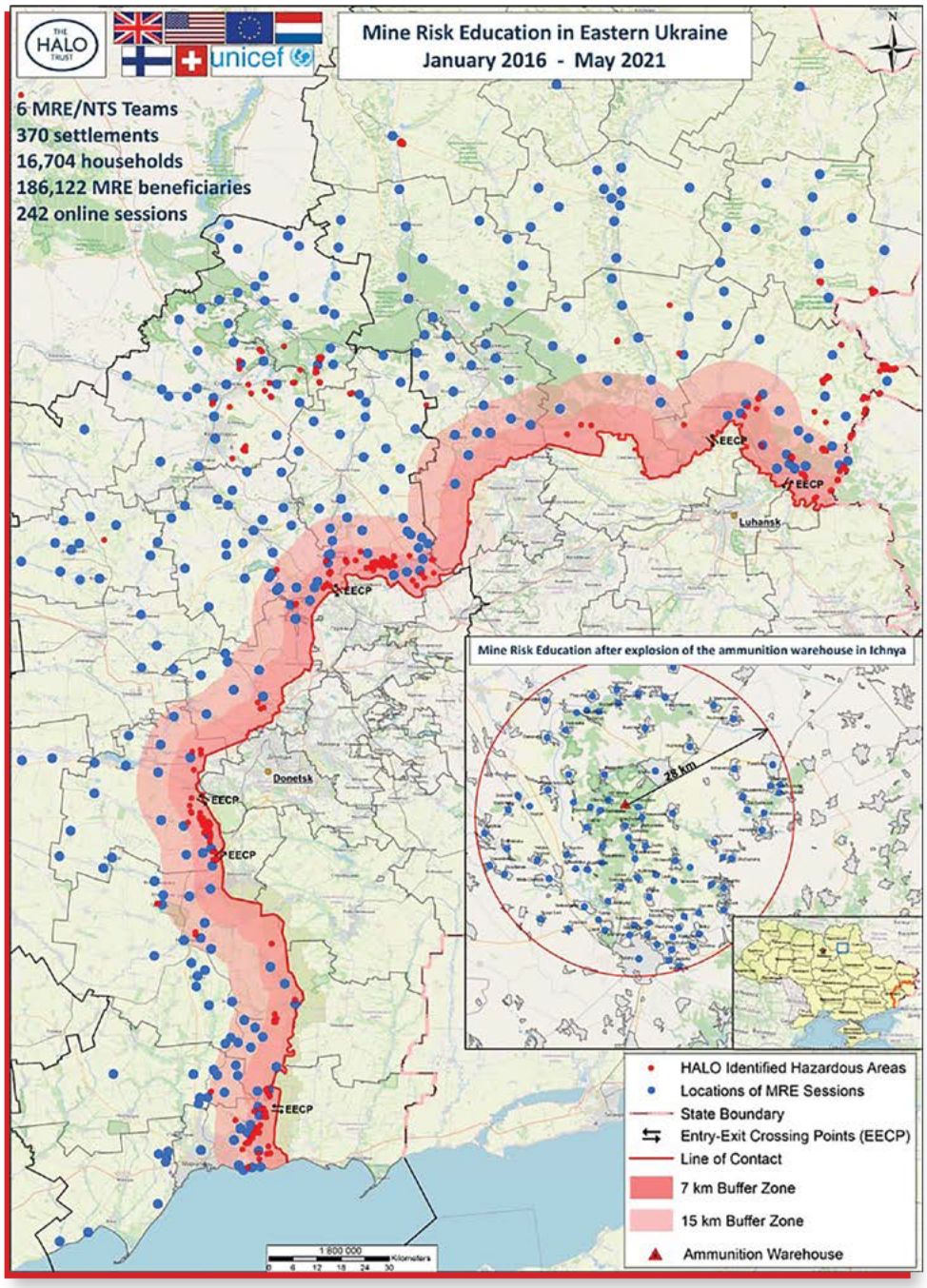
At the time of writing, in Ukraine, masks are mandatory in communal indoor spaces, many educational institutes are on a remote learning basis, and the government has restricted gatherings to a maximum of fifty people provided there is sufficient space for social distancing measures. Different regions have imposed diverse sets of restrictions as well, further complicating responses to the pandemic and necessitating a more flexible approach to EORE.

Risk Education in Ukraine Before the Pandemic

HALO has been conducting RE sessions across eastern Ukraine since 2016. In 2018, HALO received its first grant solely for conducting RE in Ukraine from the United Kingdom's Conflict, Security, and Stability Fund (CSSF), allowing the program to continuously conduct RE activities on an ongoing basis. As of September 2021, HALO's EORE team consists of twelve instructors divided into four teams that devote their time entirely to RE efforts. Before 2018, HALO focused primarily on sessions at schools and community centers, but after the explosion of an ammunition warehouse in Ichnya, Chernihiv Oblast in 2018, HALO redirected its RE approach to target each household within a 30 km radius from the warehouse. As a result, HALO visited 2,436 households in 90 settlements, providing RE to a total of 11,146 individuals, reaching the maximum number of people possible within the contamination zone. HALO has since adapted this response to regions in the immediate vicinity to the line of contact where the risk from ERW is greatest. The RE teams then attempt to cover the entire territory of the regions by working their way out from the line of contact in a westward direction covering as many settlements as possible.

Before the global COVID-19 outbreak, HALO's program in Ukraine implemented a more traditional approach to RE relying on face-to-face group sessions. These sessions, as with all of HALO's RE methods, were based on the United Nations Inter-Agency Coordination Group-endorsed International Mine Action Standards (IMAS)[5] known as EORE.[6] EORE plays a central role in long-term mine clearance and explosive ordnance disposal (EOD) projects and is one of the five pillars of HMA. One of the central elements of EORE is flexibility, which allows EORE programs to react and adapt quickly to changes in circumstances, increased conflict severity, and pandemics.

In practical terms, HALO's EORE efforts primarily consist of providing RE sessions to at-risk communities. The main locations of EORE seminars tend to be schools, but workplaces, community centers, religious organizations, and individual households can be targeted as well and have become increasingly important, allowing us to reach specific target groups within the population. However, the pandemic has restricted HALO's ability to travel and provide community, workplace, and household sessions. While currently mainly focused on children who might be unaware of the dangers of ERW, adults also benefit from RE sessions but are a more challenging demographic to reach due to their work schedules and frequent reluctance to attend sessions.



Map of HALO's RE efforts in eastern Ukraine.
All graphics courtesy of The HALO Trust.

HALO aims to reach all demographic groups in Ukraine, with slightly different to providing the same information to children and adults. While the most at-risk group is adult men, accounting for 67 percent of all civilian accidents (in which the casualty is known), many incidents also occur when children come across an article of ordnance. In many of these cases, children tamper with the explosive object, which is the most frequent action leading to civilian mine and ERW casualties and accounts for 24 percent of all civilian casualties in general recorded by HALO in Ukraine. In order to maximize the effectiveness of the campaign, HALO's approach includes teaching parents of children who have previously attended an RE session. This ensures that the adults receive the same safety training as their children. In addition, when conducting EORE, HALO limits class size to a maximum of thirty individuals.

HALO's Approach to Risk Education During the Pandemic

Initial stages of the COVID-19 pandemic. During the initial months of the pandemic in 2020, HALO benefited from UNICEF support, which provided a large supply of RE materials (leaflets, school notebooks, comic books, stickers, coloring books, and posters). Access to these materials enabled HALO to continue providing RE information without personal contact. While no direct EORE sessions were given, HALO teams visited 310,000 households in the government-controlled areas (GCA) of Luhansk and Donetsk Oblasts, totaling 182 settlements, distributing materials to over 740,000 individuals via post boxes and posters in communal locations. HALO used this opportunity to also distribute information related to the pandemic and to reduce general exposure to COVID-19.

While the pandemic limited indoor in-person interactions, HALO made use of larger indoor and outdoor locations in school grounds, summer camps, and community centers to provide RE to both children and adults. While this allowed HALO to continue the provision of RE despite the pandemic, many school districts were understandably reluctant to allow in-person teaching despite the precautions taken. In early autumn 2020, HALO RE teams transitioned to a hybrid education model to protect both children and employees from COVID-19 exposure and the harsher winter temperatures, which created limitations for holding outdoor sessions in schools that found themselves under restrictive COVID regulations. HALO held online sessions when certain school districts were under restrictions while continuing to provide in-person sessions, where permitted.

Online education. While nothing can truly substitute in-person interaction, as of September 2021, HALO had conducted over 362 sessions reaching 8,203 individuals since the beginning of the pandemic.[4]

Besides reducing the risk of infection, this new approach has allowed EORE instructors to be more flexible, mobile, and to reach more students in more complicated situations, such as during the pandemic, as instructors can work throughout Ukraine without requiring additional funding for travel. While distance learning requires more thoughtful planning, a reduction in travel time equals an increase in RE sessions delivered. Additionally, monitoring is now easier due to the ability to record each session, answer any questions retroactively, and detect any issues that need to be addressed. HALO predominantly uses Google Meet, as it requires no additional installation or funding but also uses Zoom and Microsoft Teams if schools use those software applications themselves.

The challenges of online education are mostly related to technological hindrances, as many individuals and schools do not have the necessary equipment or a reliable internet connection.[7] Teachers are often not familiar with distance learning techniques, lack the technical knowledge

related to online learning, such as multimedia projector set up or software installation, or have difficulty enforcing discipline and participation in class. In addition, due to the pandemic, many schools are reluctant to move classes around to access the multimedia equipment, which is sparse and often only in one or two rooms per school building.[8]

Despite the challenges, online education is a sufficient interim replacement for in-person RE sessions. By taking a proactive approach to the preparation, organization, and conducting of online sessions, HALO has seen positive results based on the children's interest, discipline, activity during online lessons, as well as feedback from teachers and parents.

Next Steps and Technology Adaptation for Wider Use

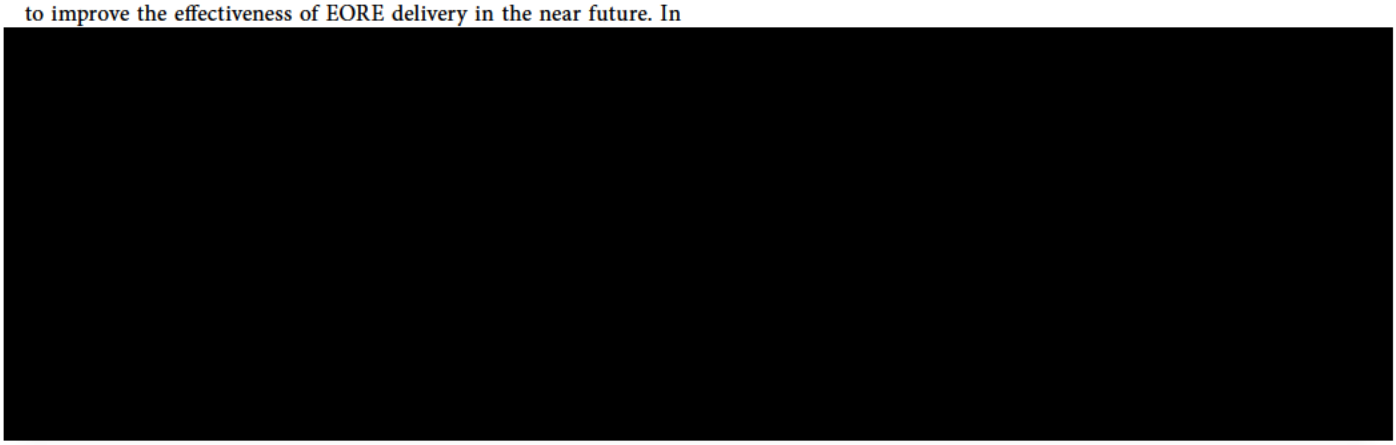
Hybrid risk education. Looking ahead to post-pandemic times, the lessons learned from providing RE to the people of Ukraine during the COVID-19 pandemic can provide opportunities for increased effectiveness of EORE projects globally.

Taking a hybrid approach utilizing both in-person and online RE sessions can involve students who are absent from in-person events due to illnesses, homeschooling, or remote locations, and can simultaneously engage their parents via online platforms. Intentionally targeting parents and their children simultaneously is a new approach to risk education, which can help consolidate knowledge in both age groups and may stimulate further discussion of the topic between adults and children.

New technologies. The use of newer technologies may also help to improve the effectiveness of EORE delivery in the near future. In Ukraine, HALO acts as a technical advisor to UNICEF concerning the development and testing of EORE and the production of training materials. In spring 2021, UNICEF, with technical expertise from HALO, developed a virtual reality EORE software tool, and HALO began implementing it as a pilot scheme for the use of VR in the provision of RE. HALO's VR program uses real locations from eastern Ukraine paired with real-life examples of ERW in conjunction with voiceovers giving instructional safety messages to create simulations of minefields and UXO located in buildings and fields. These simulations were different for each age category, taking into account the participants' abilities to perceive and assimilate information according to their age.

VR simulations have proved useful in schools to increase engagement and attention in children to highlight a variety of situations in which individuals might find themselves threatened by ERW. While VR sessions are unable to replace the effectiveness of traditional in-person events, they provide an effective tool for knowledge consolidation after RE sessions. VR users are mentally, emotionally, and physically immersed in a situation, which stimulates their senses, allowing them to interact with the environment and preparing them for real-world conditions.[9]

As the pandemic continues, and its effects are likely to be felt for years to come, HALO's new mobile and hybrid approach to EORE in Ukraine has shown potential. Depending on suitability, this approach can be adapted for other RE projects and programs across the world both during and after the COVID-19 pandemic.



ENDNOTES

Explosive Ordnance Risk Education in Ukraine during the COVID-19 Pandemic

1. Council on Foreign Relations. *Conflict in Ukraine*. Accessed May 21, 2021. https://on.cfr.org/3h4r53C
2. UNOCHA. *Humanitarian Needs Overview Ukraine*. United Nations. February, 2021. https://bit.ly/3jJWfyS
3. UNOCHA. *Humanitarian Needs Overview Ukraine*. United Nations, June, 2020. https://bit.ly/38IWJyT
4. WHO. *Ukraine: WHO Coronavirus Disease Dashboard*. May 9. 2021. Accessed May 21, 2021. https://covid19.who.int/region/euro/country/ua.
5. UNMAS. Explosive Ordnance Risk Education (EORE). 2020. New York: United Nations
6. The official definition of EORE is "activities which seek to reduce the risk of injury from EO by raising awareness of women, girls, boys, and men in accordance with their different vulnerabilities, roles, and needs, and promoting behavioral change. Core activities include public information dissemination, education, and training."
7. "New Tech for Schools in Ukraine Lets Children Tap into Education." UNICEF European Union, December 29, 2020. https://uni.cf/3kYVt0f
8. UNICEF has been providing laptops to schools and children across Ukraine during the COVID-19 pandemic to help minimize the negative effects of the pandemic on education.
9. For further examples and an in-depth discussion of virtual reality as a tool for EORE, please see: GICHD. *Review of New Technologies and Methodologies for EORE in Challenging Contexts*. September 2020. 37-41. https://bit.ly/2WZ8MG6