

► PRESIDENT'S MESSAGE



Roy Kroeger, REHS

As I sit here pondering what to write about for this month's column, I am watching one of the long-running news stations and have been entrenched with the Russian attacks on Ukraine. The attacks are a horrendous act of aggression on a neighbor that poses no threat. Watching the attacks, I also wonder about all the environmental health issues. Please do not take this column as some kind of treatise that environmental health is the most critical concern in any war because it is not. I could never imagine what the residents of Ukraine are going through and the death and destruction occurring throughout their country.

In the context of this column, however, I cannot help but wonder what long-term effects will be left behind. Obviously, there have been wars for as long as we have had people on the planet, but you would think we could rise above these aggressions at some point. Each of these wars must have created untold environmental health degradation—water and air pollution, toxics released into the environment, disease spread, greenhouse gas emissions, and so much more.

The migration of refugees trying to get out of Ukraine and the deliberate attacks on their camps create significant environmental health challenges. People are congregating by the tens of thousands, fleeing to any safety they can find. Temperatures rise to near freezing during the day and fall well below freezing at night. As these refugees travel across their country, they create temporary camps that do not have the resources necessary to create a sanitary situation. Each winter, bacteria and viruses are transmitted among populations, which amplify conditions that are

War Is Hell

*Are we prepared
for disasters
of this magnitude?*

favorable to the development of additional disease. During the winter, diseases like flu and tuberculosis will turn to malaria in the summer. Essential services such as drinking and cooking water will not be available as many attacks target infrastructure. Human and solid wastes are accumulating and are not disposed of properly. As many refugees make it to a neighboring border, they cannot cross, creating more extensive and long-term camps without resources. Once refugees are allowed to cross into neighboring countries, they will most likely end up in shelters for some time.

Bombings create additional environmental health concerns. Conventional weapons contain many toxic chemicals such as phosphorous and heavy metals. These chemicals do not just disappear after the conflict ends; they can remain as pollutants for decades after a war has ended. Weapons such as mines, cluster munitions, and other explosives can keep people out of areas that would otherwise be valuable for relocation or farming after the conflict.

If radiological weapons are used, the damage could be much more severe, and the impact could last much longer. Radiation is a big concern in this current battle as the aggressors appear to have targeted

the Zaporizhzhia Nuclear Power Plant in southeastern Ukraine. We all remember the damage from the Chernobyl Nuclear Power Plant on April 26, 1986. Chernobyl is also located in Ukraine, and the area around that plant is still not inhabitable 36 years after the disaster. Zaporizhzhia is the largest nuclear plant in Europe, and according to news reports, a catastrophe at this plant would be 10 times worse than Chernobyl. Ukraine has 14 additional nuclear reactors throughout the country that could become targets of Russian aggression.

These attacks should be a wake-up call for all countries worldwide, including our own. Are we so ignorant to think that no one will ever attack us? What if one of our enemies decided to attack the U.S. with biological or chemical weapons? Are we prepared for disasters of this magnitude? Environmental health has been part of public health preparedness and response training since 2001. I question if we are prepared to respond to war-like conditions. Public and environmental health struggled to provide a unified message during a worldwide pandemic in which six million worldwide and one million in our country have died due to a virus. That virus, though devastating, did not damage the built environment as a war could.

Our country is much different than Ukraine, and outside of the 9/11 attacks, we have never experienced an attack or other event that caused such widespread damage. We have been able to supply water when public water systems are damaged due to flooding. We have rebuilt or temporarily provided power when localized damage occurs from hurricanes or tornadoes. Do we have the capacity to provide

safe drinking water to millions if either coast was attacked? How would we keep food cold if power was out for weeks or months in the summer? Our country has many places to provide shelters if needed, but are we prepared to provide food, water, and sanitary conditions in these shelters?

Environmental health and emergency management have prepared to house many people from small areas during natural disasters, but what would it look like if millions were permanently displaced from their homes? Where would we relocate survivors if a large city or even numerous towns were destroyed? How would we care for people with damage to multiple hospitals? Are continuity plans sufficient for large-scale attacks?

Additionally, suppose more of Europe is attacked. In that case, we might see a significant influx of refugees here in the U.S. Neighboring countries have promised to supply jets to Ukraine. The aggressors have said they will be treated as combatants if they do, possibly escalating the attacks. Most of the Ukrainian refugees are headed to Poland. Our vast country can absorb thousands into our country with little concern but what if that becomes millions? Emigration could cause the spread of disease, water shortages, and vector and waste management issues throughout our country.

Recovery will be another significant environmental health challenge, regardless of if the war remains in Ukraine or spreads to

other parts of the world. The war-torn areas will be faced with controlling increased rodent and other vector populations. Evaluating water quality supplies and rebuilding water infrastructure will be crucial as residents return home. Soils must be assessed before new crops can be planted for human and animal food. Reopening grocery stores, restaurants, and schools all require environmental health expertise.

War requires a response and environmental health is the response profession for public health. 🐭

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