

# War in Ukraine has escalated HIV spread in the country: study

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Conflict in Ukraine has increased the risk of HIV outbreaks throughout the country as displaced HIV-infected people move from war-affected regions to areas with higher risk of transmission, according to analysis by scientists.

Ukraine, which has the highest HIV prevalence in Europe, has been at war since 2014 following political unrest in the country.

An international team of scientists led by Oxford University and Public Health England (PHE) analysed genetic sequences to reconstruct viral migration patterns and found that the war-related movement of 1.7 million people was associated with the dissemination of HIV in Ukraine - and that areas with a high prevalence of risky sexual behaviour were the main recipients of the virus.

The research is published in the journal *PNAS*. The study was part-funded by the Medical Research Council (MRC).

Lead author Tetyana Vasylyeva, a PhD candidate in Oxford University's Department of Zoology, said: "In a country of 45 million people, an estimated 220,000 are infected with HIV - the highest prevalence in Europe. The epidemic started in the 1990s with an explosive rise in the number of new infections in people who inject drugs, but today 70-80% of new infections are reported to be in heterosexual people who don't inject drugs. It is a silent epidemic, because about 50% of HIV-infected people are unaware of their infection status and around 40% of newly diagnosed people are in the later stages of the disease.

"In this study we found that virus migration has increased rapidly and follows a westward pattern. Donetsk and Lugansk, two large cities in the east of Ukraine that have not been controlled by the Ukrainian government since 2014, are the main exporters of the virus. We find evidence for a spatial "redistribution" of pre-existing infections, rather than new transmissions. Indeed, the observed movement of the virus into given regions was correlated with the number of HIV-infected internally displaced people moving to that region."

The study's findings, based on data collected between 2012 and 2015,

are in line with previous work on the spread of HIV throughout the western world, which was shown to have mirrored geopolitical events.

Senior author Dr Gkikas Magiorkinis, formerly of Oxford University/PHE and now of the National and Kapodistrian University of Athens, said: "This study provides evidence that the movement of people in Ukraine during the war was followed by increased risk of HIV transmission. Our analysis suggests that harm reduction services should be scaled up in order to prevent further transmission of HIV in the country, and that international support should be provided to prevent a potential new public health tragedy.

"We also observed that in 2015 the prevalence of virus resistance against drugs that can be used for pre-exposure prophylaxis (PreP) was 34%, which seems much higher than other European countries. PreP is a drug treatment that can prevent HIV infection in people who are at substantial risk and has recently emerged as an important public health strategy to control the spread of HIV. Our findings suggests that in Ukraine this method could be undermined in the near future. Further work is needed to confirm this worrying preliminary observation."

Dr Jonathan Pearce, Head of Infections and Immunity at the MRC, said: "Studies that shed light on how a disease is spread are important to enable development of effective prevention strategies. In this example, we see how the displacement of people as a result of man-made disaster, war, is contributing to the increased spread of HIV in Ukraine. This understanding will help officials shape [public health](#) practices to better manage and prevent HIV [infection](#)."

Tetyana Vasylyeva added: "The war and internal migration in Ukraine has created a worrying epidemiological situation: new HIV strains might be moving at a higher rate to regions where the conditions for onward transmission are most appropriate. The work being done to enable the

smooth running of treatment and prevention services in occupied regions is therefore of critical importance. Recently relocated people should be linked to care and harm reduction services, and there needs to be additional support for NGOs and medical facilities to help monitor and prevent local outbreaks in the central and southern regions of Ukraine."

**More information:** Tetyana I. Vasylyeva et al., "Molecular epidemiology reveals the role of war in the spread of HIV in Ukraine," *PNAS* (2018). [www.pnas.org/cgi/doi/10.1073/pnas.1701447115](https://www.pnas.org/cgi/doi/10.1073/pnas.1701447115)

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