

Disruption from war in Ukraine pushes highly contagious infectious diseases to alarming levels

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New research being presented at this year's [European Congress of Clinical Microbiology & Infectious Diseases](#) (ECCMID) in Copenhagen,

Denmark (15–18 April), reveals an extremely worrying picture of rising infectious diseases cases and falling levels of childhood vaccination and case detection in the eastern region of Ukraine in the city of Kharkiv and Kharkiv region, the scene of some of the most intense combat in 2022.

The research by Maryna Railian and Tetyana Chumachenko from Kharkiv National Medical University (KhNMU), Ukraine, examines how fierce fighting in the Kharkiv region, which was under attack from the first minutes of the Russian invasion of Ukraine, and continues to be under rocket and artillery fire, significantly disrupted access to medical care, routine vaccinations, and the response to [infectious disease outbreaks](#).

They analyzed official data from the State Institution Kharkiv Oblast Center for Disease Control and Prevention of the Ministry of Health to assess infectious disease incidence and vaccination coverage for the population in the Kharkiv region across 9 months of 2022.

Between January and September, 124,170 infectious disease cases were registered in the Kharkiv region—40% less than during the same period before the war in 2021 (207,038 infectious disease cases).

Official data also suggests that the total percentage of the population exposed to infectious diseases decreased by 1.7 times compared to the same period in 2021. And the proportion of children affected by infectious diseases fell from 29% in 2021 to 23% in 2022.

Nevertheless, new cases of shigellosis, a highly contagious diarrheal disease, were three times higher in the Kharkiv region than average rates across Ukraine. Similarly, new cases of rubella (German measles) were 11 times higher than the Ukraine average, whooping cough five times higher and viral meningitis 2 times higher.

Additionally, new cases of viral hepatitis A in the region exceeded the country average by 2.4%, viral hepatitis B by 87%, and chronic viral hepatitis B and C combined by 72%.

"During this period, only severe forms of infections and diseases with a pronounced clinical picture were recorded," explains Railian. "These data underscore the unfavorable epidemic situation that arose during the hostilities and partial occupation of the Kharkiv region. Mild cases were not registered or isolated and continued to be sources of infection, exacerbating the spread of diseases."

Similar patterns were seen in children, with shigellosis and viral meningitis incidence around six times higher in the Kharkiv region compared to the Ukraine average, rubella incidence 23 times higher, and new cases of whooping cough five times greater than the country average.

"The shockingly high incidence of highly contagious infectious diseases in the Kharkiv region compared to Ukraine as a whole reflects the appalling living conditions across the region where water supply interruptions were common and residents were unable to buy even basic healthy foods," says Railian. "The widespread damage and destruction to infrastructure and atrocious living conditions meant much of the population had to be relocated for their safety."

The analysis also found that the ongoing crisis has had dramatic effects on routine childhood vaccination coverage across the Kharkiv region, putting the most vulnerable at increased risk of severe illness and death. Between January and September 2022, the rate of polio vaccination fell to 40%, hepatitis B to just 37%, tuberculosis to 43%, measles, mumps and rubella to 50%, and diphtheria, whooping cough and tetanus to 46% (and only 24% in the adult population).

However, the authors caution that given the lack of disease surveillance and public health infrastructure available for diagnosis, the true burden of infectious disease remains unknown.

Worryingly, the authors say that this might be just the tip of the iceberg. "The upsurge in measles and other vaccine-preventable infectious diseases could soon become uncontrollable. The stark reality is that in the absence of surveillance, diagnostic, and preventive measures, these figures most likely represent an underestimate of the true situation," says Railian.

Infectious disease case detection has halved

Further analyses examining the impact of the war on infectious disease surveillance capacity in Kharkiv Hospital, reveals that the case detection rate is only half of that prior to the war. Between January and October 2021, 2,306 infectious [disease](#) cases were registered, this declined to 1,056 reports during the same period in 2022, with just 31 cases registered from March to August 2022.

The hospital in the capital city of the Kharkiv region provides [medical care](#) to almost 17,000 adults in 25 medical specialties.

Worse still, infectious illness in the hospital wasn't registered in full, with almost two-thirds of cases left without laboratory results between January and October in 2022, and three-quarters of cases not given a final diagnosis.

"Because of the hostilities, [medical staff](#) could not get to work and large numbers of workers responsible for registration of cases left the country," explains Railian. "Our findings underscore the urgent need to strengthen medical support in the regions of Ukraine where active hostilities are taking place. We must prioritize field vaccination teams in

populated areas and health education campaigns to highlight the growing threats of [infectious diseases](#)."

Provided by European Society of Clinical Microbiology and Infectious Diseases

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