

Screening healthcare workers could serve as early warning system for future viruses

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New research has shown that COVID-19 infections in healthcare workers during the first wave of the pandemic provided an accurate sample of the general population, suggesting that data from healthcare workers could be used to estimate the severity of future viruses more

quickly.

The study, led by researchers from RCSI University of Medicine and Health Sciences in collaboration with IBM Research, is published in *PLOS ONE*.

The researchers analysed the infection data from [healthcare workers](#) and the progression of the first wave of the COVID-19 outbreak using the reported daily infection numbers in Ireland. Using similar data in four other countries (Germany, UK, South Korea and Iceland), computer models showed how the [disease](#) progressed in different countries related to their approach to testing, tracing and lockdown restrictions.

Healthcare workers in Ireland made up 31.6% of all test-confirmed infections while only representing 3% of the population. However, the researchers found that the healthcare [worker](#) data closely related to that of the entire population after using software to create a more accurate picture of how widespread the disease was.

This suggests that governments could use data from only healthcare workers to inform decisions on whether to implement restrictions, wide-scale testing and contact tracing for future viruses.

"As we have seen with the COVID-19 pandemic, implementing countermeasures early can save lives and reduce the spread of the disease," said RCSI Professor of Chemistry Donal O'Shea, who led the work.

"However, wide-scale testing can take time to set up, delaying decisions and costing lives. While the healthcare population is no longer an accurate sample of the general population for COVID-19 due to different vaccination rates, governments could use data from their healthcare worker population to make informed decisions on what

measures to implement earlier when future viruses emerge."

The research noted that very few nations were able to set up effective systems that tested the entire [population](#), carried out contact tracing and quarantined those infected with COVID-19.

"Setting up wide-scale testing systems for healthcare workers is much easier than setting up a similar programme for everyone since the infrastructure for testing for diseases is always in place in healthcare settings," said Dr. Dan Wu, honorary lecturer in the RCSI Department of Chemistry and first author on the paper.

"A screening programme that tested all healthcare workers would have the additional benefit of catching asymptomatic spread of the disease since all [healthcare](#) workers would be tested. If governments could catch highly infectious diseases and implement countermeasures early, this could possibly prevent new viruses from erupting into another epidemic/pandemic."

More information: Dan Wu et al, Correlation of national and healthcare workers COVID-19 infection data; implications for large-scale viral testing programs, *PLOS ONE* (2021). [DOI: 10.1371/journal.pone.0250699](#)

Provided by RCSI

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