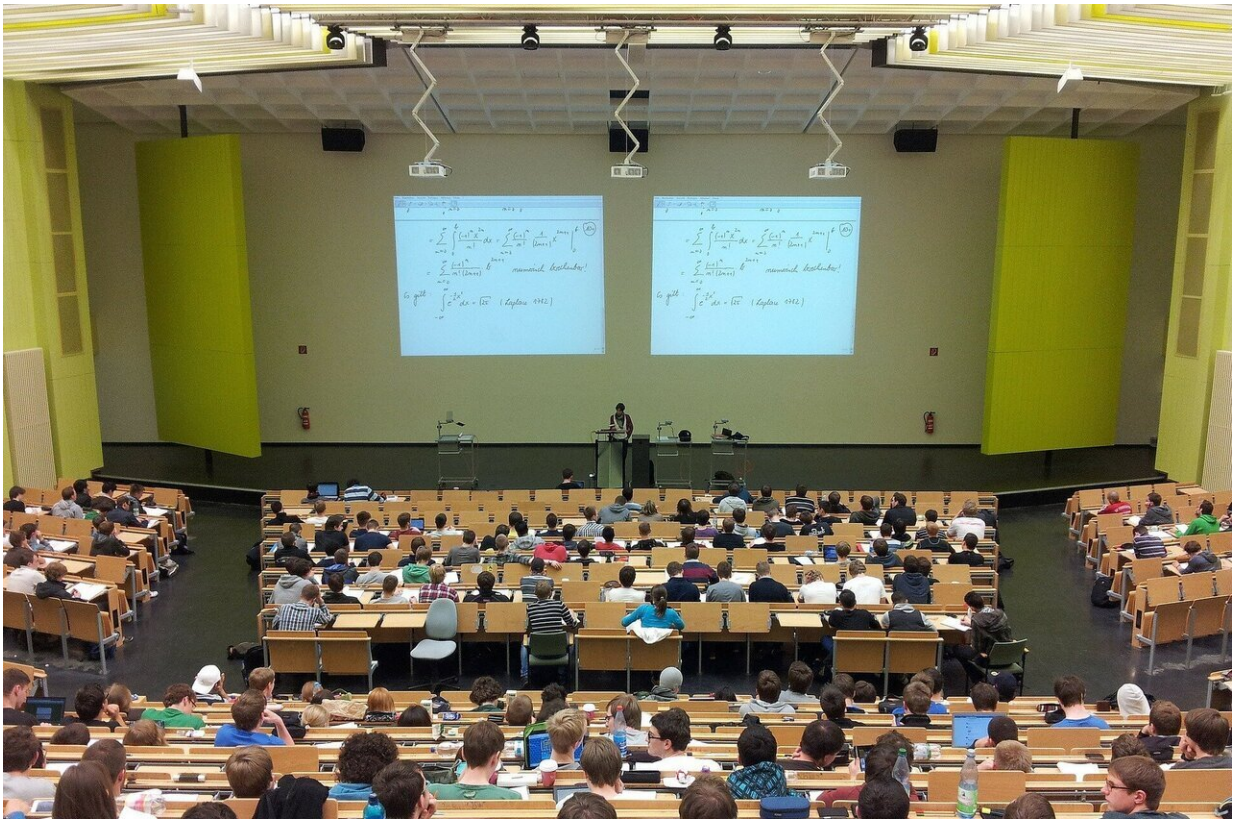


Even college campuses with 100% vaccine rates need COVID-19 tests

October 18 2021



Credit: CC0 Public Domain

Most universities are encouraging vaccination, and many have mandated vaccination for all students. Given the availability of effective vaccines, there is a growing need to reevaluate the importance of university

COVID-19 protocols. If a student population is completely vaccinated, are testing and quarantine still important to limit viral spread on college campuses?

Florida Atlantic University in collaboration with Duke University and the University of North Carolina conducted an analytical study of 5,000 simulated undergraduates to evaluate the use of surveillance testing and quarantine in a fully-vaccinated [student](#) population for whom vaccine effectiveness may be affected by the type of vaccination, presence of variants, and loss of vaccine-induced or natural immunity over time.

For the study, researchers assumed that 100 percent of residential undergraduates were vaccinated. Under varying levels of vaccine effectiveness (90 percent, 75 percent, and 50 percent), they estimated the reductions in the numbers of positive cases under various mitigation strategies that involved surveillance testing and quarantine.

Results, published in *JAMA Health Forum*, showed that if 100 percent were vaccinated with 90 percent vaccine effectiveness, surveillance testing and quarantine were not associated with a substantial reduction in infections. However, if vaccine effectiveness was reduced to 75 percent, weekly surveillance testing was associated with a substantial reduction in the number of infections; at 50 percent [vaccine](#) effectiveness, surveillance testing and quarantine were associated with a marked reduction in the estimated number of infections. At 50 to 75 percent effectiveness, surveillance testing was estimated to reduce the number of infections by as much as 93.6 percent. A 10-day quarantine protocol for exposures was associated with only modest reduction in infections until [vaccine effectiveness](#) dropped to 50 percent.

"Findings from our study suggest that surveillance testing and isolation of positive cases may remain important mitigation strategies for universities even if 100 percent of the students are vaccinated. Our

results also support the suggestion that quarantine may be unnecessary for a well-vaccinated student population," said Francis Motta, Ph.D., lead author and an assistant professor, Department of Mathematical Sciences, FAU Charles E. Schmidt College of Science, who worked closely with Steven B. Haase, Ph.D., corresponding author and a professor of biology at Duke University.

Mathematical models have been useful tools for exploring the SARS-CoV-2 [infection](#) dynamics and the effects of various mitigations on university campuses. For this study, researchers used simulated infection dynamics of an agent-based, modified Susceptible, Exposed, Infected, Recovered (SEIR) model to investigate the effect of surveillance testing and quarantine in this student population. They also estimated the added reduction in viral transmission because of quarantining reported contacts or increasing surveillance testing frequency over weekly surveillance testing alone.

"Our modeling efforts came at a time when many universities were abandoning their COVID-19 mitigation programs, when it looked like cases were plummeting in the U.S. and the Delta variant was not yet making headlines," said Motta.

Recent CDC guidance suggests that mitigations, such as testing, quarantine, and masking are not necessary for vaccinated populations, and universities are likely to continue to adopt these guidelines as university policy.

"Relaxing mitigations will necessarily increase the number of interactions within student populations; thus, without [surveillance](#) testing, limiting infections on campus will mostly rely on the capability of vaccines to prevent infection and transmission," said Motta.

More information: Francis C. Motta et al, Assessment of Simulated

Surveillance Testing and Quarantine in a SARS-CoV-2–Vaccinated Population of Students on a University Campus, *JAMA Health Forum* (2021). [DOI: 10.1001/jamahealthforum.2021.3035](https://doi.org/10.1001/jamahealthforum.2021.3035)

Provided by Florida Atlantic University

Citation: Even college campuses with 100% vaccine rates need COVID-19 tests (2021, October 18) retrieved 11 May 2024 from <https://medicalxpress.com/news/2021-10-college-campuses-vaccine-covid-.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.