

Cost effective COVID-19 mitigation measures in US colleges

COVID-19 mitigation measures such as social distancing and mask wearing appear to be cost effective on college campuses, but routine laboratory testing would not be cost effective at current costs according to findings of a US study published in *Annals of Internal Medicine*.

The Clinical and Economic Analysis of COVID-19 interventions (CEACOV) model was used to evaluate the cost effectiveness of 24 COVID-19 mitigation strategies including social distancing, mask wearing, isolation, and laboratory screening every 3, 7 or 14 days, in a US college with 5000 students and 1000 faculty staff within a community population of 100 000. Cost effectiveness was assessed from a modified US societal perspective over a time horizon of one semester (105 days). The assumed cost per laboratory test was \$10.*

The number of COVID-19 cases in students was estimated to decrease from 3746 with no mitigation strategies to 493 with extensive social distancing and mask wearing, and to 151 cases with laboratory testing every 3 days in asymptomatic students. The corresponding number of cases in faculty staff was 164, 28 and 25, respectively.

Estimated costs ranged from \$414 749 with minimal social distancing to \$2.1 million for a mitigation strategy which included extensive social distancing, mask wearing and frequent laboratory testing. Estimated incremental cost-effectiveness ratios (ICERs) for extensive social distancing plus mask wearing, compared with mask wearing only, were \$170 per infection averted, and \$49 200 per QALY gained. Estimated ICERs for the addition of routine laboratory testing to social distancing plus masks ranged from \$2010 to \$17 210 per infection averted, and from \$811 400 to \$2 804 600 per QALY gained, depending on the frequency of testing. Sensitivity analysis found that tests costs had the greatest impact on ICERs.

"Extensive social distancing and mandatory mask-wearing policies would enable higher education institutions to have the greatest effect in reducing COVID-19 infections among students and faculty. Routine laboratory testing would further reduce infections but would require lower-cost tests combined with markedly increased capacity to be feasible for many colleges," concluded the authors.

* 2020 US dollars