

## Expanded testing for COVID-19 could be cost effective in USA

Expanded testing for COVID-19 [SARS-CoV-2] to include monthly testing in the asymptomatic population as well as testing of symptomatic patients could be cost effective in Massachusetts, USA, according to findings of a study published in *Clinical Infectious Diseases*.

The Clinical and Economic Analysis of COVID-19 Interventions (CEACOV) microsimulation model was used to compare four polymerase chain reaction (PCR) testing strategies for COVID-19 in the Massachusetts population (excluding residents in long-term care): testing patients with severe or critical symptoms requiring hospitalisation (hospitalised); testing patients with any COVID-19 symptoms (symptomatic); testing symptomatic patients plus one-time testing in the entire population (symptomatic plus asymptomatic-once); or testing symptomatic patients plus monthly testing in the entire population (symptomatic plus asymptomatic-monthly). It was assumed that patients who tested COVID-19-positive would self-isolate. Cost effectiveness was assessed from a US healthcare sector perspective over a 180-day time horizon (from May to November 2020), under scenarios with a range of effective reproduction numbers ( $R_e$  0.9–2) for the transmission of COVID-19. It was assumed that the PCR test cost was \$51.\*

It was estimated that all expanded testing strategies would be more effective than testing hospitalised patients only. Symptomatic plus asymptomatic-monthly testing would reduce the infection rate by 64% and the death rate by 46% compared with testing of hospitalised patients only but would incur five-fold higher costs at  $R_e$  0.9. However if the  $R_e$  was 1.6 or greater, symptomatic plus asymptomatic-monthly testing would be cost effective, with an incremental cost-effectiveness ratio (ICER) below the willingness-to-pay threshold of \$100 000 per QALY gained.

Sensitivity analysis found that symptomatic testing plus asymptomatic testing every 14 days would be cost effective at all  $R_e$  values assessed if the cost of PCR test assays was \$3 or less.

"Testing people with any COVID-19-consistent symptoms would be cost saving compared to testing only those whose symptoms warrant hospital care. Expanding SARS-CoV-2 PCR testing to asymptomatic people would reduce infections, deaths, and hospital resource use. Despite modest sensitivity, low-cost, repeat screening of the entire population could be cost-effective in all epidemic settings," concluded the authors.

\* 2020 US dollars