

## Cost-effectiveness framework for evaluating COVID-19 therapies

A cost-effectiveness framework for evaluation of potential COVID-19 therapies which includes societal costs and post-discharge outcomes shows that treatments which reduce mortality are likely to be cost effective in the US, say authors of a Genentech-funded study published in *Advances in Therapy*.

A short-term acute-care decision tree followed by a post-discharge Markov model, populated with data on inpatient care, use of mechanical ventilation and post-discharge ventilator-related morbidity from phase III trials, was used to evaluate the cost effectiveness of a potential treatment in patients hospitalised with COVID-19, compared with best supportive care (BSC), from US health payer, societal and fee-for-service (FFS) payment perspectives over a lifetime time horizon. Drugs were assumed to cost \$2500\* for a single course of treatment.

Overall, treatments which conferred at least a mortality benefit were likely to be cost effective, with estimated incremental cost-effectiveness ratios (ICERs) well below US willingness-to-pay (WTP) thresholds from health payer and FFS payment perspectives, with and without the inclusion of societal costs.

In base-case analysis, potential COVID-19 therapy was estimated to gain 0.438 incremental QALYs compared with BSC, and was estimated to result in ICERs of \$22 933 per QALY gained from a health payer perspective using bundled payments, \$11 492 per QALY gained from a societal perspective, \$19 469 per QALY gained from the FFS payment perspective, and \$8028 per QALY gained from the FFS perspective when the societal impact was included.

Sensitivity analyses found that inclusion of societal costs produced ICERs 40%–60% lower than ICERs estimated from the payer perspective, even under conservative assumptions.

"Effective COVID-19 treatments for hospitalized patients may not only reduce disease burden but also represent good value for the health system . . . despite limited data available on the long-term impact of invasive mechanical ventilation and productivity of COVID-19 patients post-discharge, it is possible to estimate the cost-effectiveness of inpatient treatments for COVID-19 from a societal perspective using a conservative approach to help guide future decisions on allocation of healthcare resources," concluded the authors.

\* 2020 US dollars