Which HIV Prevention and Care Interventions Are Most Cost Effective?

Researchers examined increasing use of PrEP, expanding access to opioid use disorder treatment and improving engagement with HIV care.

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Among various interventions meant to prevent HIV or increase rates of antiretroviral (ARV) treatment among people living with the virus, many are cost effective, and some would even save money in the long run, according to a new study based on mathematical modeling. However, because no single individual approach is likely powerful enough to take a large bite out of the HIV transmission rate, a combination approach is needed to curb the epidemic.

Emanuel Krebs, a health economist at the British Columbia Centre for Excellence in HIV/AIDS, and colleagues analyzed 16 evidence-based interventions from the Centers for Disease Control and Prevention's Compendium of Evidence-Based Interventions and Past Practices for HIV Prevention. They used a mathematical model calibrated for Atlanta, Baltimore, Los Angeles, Miami, New York City and Seattle to estimate the impacts of and financial resources required to implement those interventions.

Specifically, the investigators estimated how, after a 10-year implementation period, each intervention would change the status quo over a 20-year period. One of the factors they analyzed was how much it would cost for the interventions to provide one additional quality-adjusted life-year (QALY).

A QALY is a composite measurement of increased life expectancy and improved quality of life. In the United States, an intervention is typically considered cost effective if the cost to yield one additional QALY is less than $100,000. Indeed, that was the threshold used in this study.

Publishing their findings in the journal AIDS, the study authors found that increasing HIV testing either saved money or was cost effective across all the cities.

Driving up pre-exposure prophylaxis (PrEP) use among men who have sex with men at high risk for HIV saved money in Miami and was cost effective in Atlanta (at $6,123 per additional QALY), Baltimore ($18,333 per QALY) and Los Angeles ($86,117 per QALY).

Improving access to medication-assisted treatment for opioid use disorder was cost effective

across all the cities, ranging from $20,173 per additional QALY for the use of methadone in Miami to $40,916 per additional QALY for the use of buprenorphine in New York City.

Of all the interventions, the most cost effective were interventions designed to improve the rates of initiation of ARV treatment among people diagnosed with HIV.

However, the investigators found that no single intervention was projected to reduce the annual rate of new HIV transmission by more than 10% in any city.

“Combination implementation strategies should be tailored to local epidemiological contexts to provide the most value,” the study authors concluded. “Complementary strategies addressing factors hindering access to HIV care will be necessary to meet targets for HIV elimination in the United States.”

To read the study (free registration with Medscape is required), click here.

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