Even With Low Prevalence, HIV Screening Pays Off

‘HIV screening is more cost effective than other screening programs done routinely in the U.S.’

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WASHINGTON — Routine HIV screening among all adults is cost effective even in settings where the prevalence is low; Dr. Rochelle P. Walensky said at a meeting on HIV diagnosis, prevention, and care in the United States. But there’s a catch. The cost-effectiveness of HIV screening relies heavily on effective linkage to care.

The costs and benefits of HIV screening are so strongly linked to subsequent care of identified HIV patients that the cost of the test itself—which enzyme-linked immunosassay or rapid test technology is used—is much less relevant to the calculation, especially at prevalences above 1%, said Dr. Walensky, associate director of the Program in Epidemiology and Outcomes Research at the Harvard Center for AIDS Research, Boston.

She summarized cost-effectiveness data during the meeting, which was sponsored by the American Academy of HIV Medicine and test kit manufacturers.

According to an analysis led by Dr. David Parkell of Yale University, New Haven, Conn., the cost-effectiveness ratio for routine HIV screening every 5 years among high-risk patients (3.6% prevalence) in outpatient settings was $50,000 per quality-adjusted life year (QALY) gained. At a 1% prevalence of undiagnosed HIV infection, routine testing every 5 years had a cost-effectiveness ratio of $71,000/QALY gained (N. Engl. J. Med. 2005;352:586-95).

A separate study that was published in the same issue of the New England Journal of Medicine found a cost-effectiveness ratio of $41,736/QALY in a population with a 1% prevalence (N. Engl. J. Med. 2005;352:570-85).

In an updated analysis that included transmission effects in the model, Dr. Parkell and his colleagues found that cost-effectiveness ratios remained below $50,000/QALY in settings with HIV prevalence as low as 0.2% for routine HIV screening on a one-time basis, and at prevalences as low as 0.45% and annual incidences as low as 0.0075% for screening every 5 years (Ann. Intern. Med. 2006;145:797-806).

By comparison, previous studies have found cost-effectiveness ratios of approximately $37,100/QALY for annual breast cancer screening in women aged 50-69 years, about $57,700 for colon cancer screening in adults aged 50-85 years, and $70,000 for diabetes screening in adults over age 25 years.

“HIV screening is more cost effective than other screening programs done routinely in the United States … Taken together, these data strongly support the CDC guidelines,” said Dr. Walensky, who is also a practicing infectious disease specialist at Brigham and Women’s and Massachusetts General hospitals, Boston.

An analysis for which she was the lead author suggested that in a setting of limited resources, it’s better to target funds ensuring that people who are identified as HIV-positive return for follow-up than it is to offer screening to more people. At an HIV prevalence of 1%, a program with a 20% probability of being tested and an 80% probability of follow-up yielded a cost-effectiveness ratio of $12,900/QALY, compared with $36,300 for a program with 80% testing but only 20% follow-up (Med. Decis. Making 2005;25:321-9). More simply put, we shouldn’t be looking for more needles in a haystack if we’re just going to throw them back,” Dr. Walensky said.

Another published analysis by Dr. Walensky and her colleagues dramatically illustrates the progress made over the years with the introduction of new interventions for AIDS patients, and why broader screening is now being encouraged. Back in 1980-1992, the introduction of opportunistic infection prophylaxis conferred a survival benefit of approximately 3.1 months/person, compared with untreated disease. The first wave of antiretroviral therapy in 1996 pushed that survival advantage up to 93.7 months.

Today, four eras of increasingly effective antiretroviral therapy in addition to prophylaxis has meant an extra 159.9 months of life, or 13 years beyond the life span of someone diagnosed in the mid-1980s.

“HIV diagnosis leads to therapies whose survival benefits are enormous,” Dr. Walensky said.

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