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Can the HIV Home Test Promote Access to Care? Lessons Learned from the In-home Pregnancy Test

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Abstract

Adolescents and young adults are the fastest growing age group of HIV+ individuals in the US and many who are infected do not know their HIV status. The HIV home test has the potential to help curb the HIV epidemic by improving detection of persons living with HIV and enabling them to seek follow-up care, but, it has not yet been evaluated in adolescents. Analogous to the home pregnancy test, which was met with much resistance and only successfully marketed during a time of social change, the HIV home test has been met with resistance since its FDA approval. This commentary summarizes the need to systematically evaluate positive and untoward/unanticipated effects of HIV home testing, particularly in young adults.

The overall incidence of human immunodeficiency virus (HIV) has been declining in the US, yet it continues to grow at alarming rates for adolescents and young adults (1). Almost 40% of new HIV infections in the US are in this age group (2). Further, many HIV infected adolescents and young adults are unaware of their infection. Nationwide, only 22.6% of sexually active high school students have ever been tested for HIV (3). While advances in drug regimens have transformed HIV into a chronic disease, infected individuals need to be identified and subsequently engaged in care (4).

The HIV Home Test

When properly used, HIV testing is the gateway to treatment, care, and prevention (5). In July 2012, the FDA approved the over-the-counter sale of a rapid HIV test for home use (OraQuick, OraSure Technologies, Inc., Bethlehem, PA) for persons 17 years of age. The test has high sensitivity and specificity (99.8% and 92%, respectively)(6). Public response to the FDA approval of this home test has been enthusiastic(7). Approval of this technology

has the potential to dramatically curb the HIV epidemic by improving the detection of persons living with HIV and enabling them to seek follow-up care (6). Proponents of the test have noted that the lack of mandatory counseling with the HIV home test may help decrease the stigma around testing(8). Past research on use of the HIV home test in adults has examined their ability to accurately use the test (9), emotional and behavioral reactions, coercion by others to use the test (10), and the ability to use the information to get the appropriate treatment. Findings from a study in adult men who have sex with men (MSM) showed that the test helped identify high-risk partners, allowing users to modify their sexual behavior to decrease their own risk of HIV infection. In addition, there was an increase in the risk perception of the participants who used the test, and they behaved more cautiously even after their partners tested negative(11, 12).

The HIV home test may be of particular relevance to underserved adolescents and young adults. In particular, ethnic minority and socially disadvantaged adolescents and young adults are most likely to be affected by the disease and least likely to have access to healthcare services because they are underinsured or uninsured. Adolescents from poor, minority, and socially disadvantaged communities face significant challenges accessing preventive and treatment services(13). Adolescents and young adults are not likely to use clinic-based testing services because of lack of insurance coverage, stigma, and other priorities. Blacks and Hispanics < 18 years old are less likely than Whites to be insured (14). Low-income adolescents are 4 times as likely as middle- or high-income youths not to have a usual source of health care, and 7 times as likely to have unmet medical needs (9) despite eligibility for Medicaid or the State Child Health Insurance Program (15). Even adolescents who have adequate insurance may avoid getting an HIV test in a healthcare setting because of a fear of loss of confidentiality (16). Finally, youth may seek testing when clinics are closed, such as nights and weekends. For these reasons, HIV home-testing may be attractive to adolescents and young adults.

Unintended Consequences of the HIV Home Test

As with any new products or technologies, the HIV home test may have unexpected and/or adverse consequences. As an example, Nonoxynol-9, a common spermicide used in lubricants and lubricated condoms that was expected to have microbicidal properties, was subsequently found to increase the risk for HIV infection (17, 18). From a public health point of view, it is critical to assess potentially untoward and unanticipated effects of HIV-related technology, especially if the technology may be used for purposes different from the intended ones.

Little is known about what adolescents and young adults will do if they receive a positive HIV home test result. There are reports of individuals who committed suicide or acts of violence after discovering that they were HIV+ (18-20). Hence, the ability of adolescents and young adults to cope with a positive HIV test is an essential concern. Moreover, they may interpret a negative test result as a sign of invincibility, thus promoting risky sexual behavior.

Finally, recent reports suggest that the HIV home test may be used to screen sexual partners prior to intercourse and then engage in unprotected sex(4, 19). If the home test is used as a screening tool, campaigns stressing condom use may become obfuscated because people might believe that a negative HIV home test makes condom use unnecessary. This would present a significant public health challenge in adolescents and young adults who currently, despite easy access to condoms, do not consistently use them during sexual encounters (21)

Need for Further Study in Adolescents and Young Adults

Even though the HIV home test has only been licensed for use by those age 17 years and older, younger adolescents (14-16 year olds) in high school likely gain access to this technology through their peers as has been evidenced with other age restricted products (22). Because accurate test results are dependent upon proper application and interpretation of the test and because it is not known how adolescents will emotionally respond to results, there is a need to assess the potential use of HIV home tests in adolescents.

Further, the current cost of the home test (\$40) is prohibitive for most adolescents and young adults, especially among those most at-risk for HIV (23). It is important to understand how reducing the costs of the test may be an enabler for gaining access to these products. The rapid HIV home test may soon be available at prices equivalent to those of condoms and therefore may be widely accessed by adolescents and young adults (24). As mass production of these tests begins and competition between manufacturers develops, prices will most likely decrease.

Home Pregnancy Tests Raised Analogous Concerns

Similar to many of the current challenges and concerns raised by the HIV home test, the use of home pregnancy tests were met with much resistance and only successfully marketed during a time of social change (25). The home pregnancy test emerged in 1972 from research at the National Institutes of Health. Initial public concerns raised included the fear that promiscuity would increase (for example, Roe v. Wade made abortion legal one year after the home pregnancy test became available (26)) or that women would be less likely to seek health care if they could determine their own pregnancy status. Nevertheless, these tests are now widely used and accepted and promote access to earlier prenatal care. According to the FDA, approximately one-third of American women have used a home pregnancy test. They allow women rapid access to highly sensitive and personal information, can confirm pregnancy much earlier, and provide pregnant women an opportunity to seek health care services earlier in their pregnancy. In fact, these tests have actually raised awareness about prenatal care and given women more power to influence the healthy development of their babies (27). Hence, the confluence of scientific knowledge and the emerging social atmosphere of sexual freedom gave license to the development and marketing of one of the most popular products for home diagnostic testing (28).

Summary and Recommendations

Nearly 60% of infected youth in the US do not know their HIV status. Hence, early identification of HIV infection in this age group is a critical public health priority. The HIV

home test may contribute to improving HIV testing rates and timely access to treatment after HIV diagnosis and may also promote risk reduction behaviors. Nonetheless, the potential impact of this technology needs to be better understood since the use of HIV home tests not only addresses an important public health issue, but also raises cultural, ethical, and sociologic questions not unlike those encountered decades ago with the development, approval and marketing of the home pregnancy test.

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