Provider-Initiated HIV Testing & Counseling (PITC) refers to HIV testing and counseling which is routinely recommended by health care providers to persons attending health care facilities as a standard component of medical care.\(^1\) With this approach, an HIV test is recommended for all patients whose clinical presentation might result from underlying HIV infection or as a standard part of medical care for all patients attending health facilities in areas of high HIV prevalence.

PITC is distinct from client-initiated HIV testing and counseling (CITC) model—often referred to as voluntary counseling and testing (VCT)—in which individuals seek HIV testing and counseling services on their own initiative. PITC may include both opt-in and opt-out approaches. An opt-out approach, in which individuals must specifically decline the HIV test if they do not want to be tested after receiving pretest information, is more common compared to an opt-in approach, in which individuals must actively select testing. Regardless, provider-initiated testing and counseling must include pre- and post-test counseling about HIV and an HIV test. However, the pre- and post-test counseling in PITC is often briefer than in CITC. Additionally, the pre-test counseling in PITC tends to focus on the importance of testing and informed consent as opposed to conducting an individual risk assessment. In all cases, HIV testing remains voluntary and is never mandatory. In 2007, the World Health Organization (WHO) issued guidelines recommending that countries and organizations adopt PITC to increase HIV testing rates.\(^1\) These guidelines were developed because HIV testing rates and knowledge of HIV status remained low globally, despite increased access to HIV treatment, care, support, and prevention services.

Effectiveness of Provider-Initiated HIV Testing and Counseling Interventions

The Kennedy et al.\(^2\) systematic review evaluated the impact of PITC in low- and middle-income countries on HIV risk behaviors and treatment seeking behaviors of participants before and after the intervention and/or as compared to those who were not exposed to the intervention.
HIV Testing Uptake
6 studies
• Four serial cross-sectional studies of PITC in antenatal care (ANC) clinics in sub-Saharan Africa reported an increase in both the proportion of pregnant women who tested for HIV and the proportion of these women who chose to receive their HIV test results.
• One randomized-controlled trial (RCT) in China also showed an increase in the willingness of pregnant women to test for HIV after receiving PITC.
• A non-randomized, multi-arm trial in the Democratic Republic of the Congo (DRC) showed that HIV testing uptake was 95-98% when either on-site referral for testing or routine PITC was used. In comparison, referral to an off-site VCT center resulted in a significantly lower level of uptake of HIV testing (68.5%).

Condom Use
6 studies
• One time-series study in Rwanda found a significant increase in reported condom use among HIV serodiscordant couples from 4% before testing and counseling to 58% one year after PITC.
• One study comparing pregnant women before and after PITC in Côte d’Ivoire showed that significantly higher numbers of women reported ever using condoms after PITC.
• One study from Thailand reported both increases in communication about condom use and HIV risk and increases in consistent condom use over time.
• One study among male STD clinic attendees in India found an increase in reported consistent condom use with sex workers associated with PITC.
• Condom use did not significantly change following PITC in one study among TB patients in Côte d’Ivoire.
• Among outpatient clinic patients in Uganda, risky sex acts decreased following PITC in one before/after study. Among individuals who tested HIV-negative, condom use with discordant partners remained relatively constant. Among individuals who tested HIV-positive, condom use with concordant HIV-positive partners declined.

Initiation of Nevirapine Or AZT Use For PMTCT
4 studies
• Three studies in sub-Saharan Africa measured nevirapine or AZT uptake after PITC was adopted. One reported that uptake of nevirapine in HIV-positive pregnant women increased with PITC, but two showed no difference.
• A study in Zambia comparing the provision of nevirapine without HIV testing (universal) to provision of nevirapine to HIV-positive patients identified through HIV testing (targeted) found that adherence to nevirapine was higher in the targeted versus universal approach; however, the number of infants without nevirapine detected in the cord blood was not significantly different.

Enrollment of HIV/TB Patients In Treatment Programs
3 studies
• Using PITC interventions in TB clinics resulted in the increased enrollment of HIV-positive TB patients in ART programs in one serial cross-sectional study in Zambia and either HIV or TB treatment programs in another serial-cross sectional study in Kenya.
• Another non-randomized trial in the DRC found no significant change in the proportion of HIV-positive TB patients who started cotrimoxazole treatment.

How is the Effectiveness of a Provider-Initiated HIV Testing and Counseling Intervention Determined?
The findings presented in this fact sheet come from a recent meta-analysis of 19 studies.² The researchers defined PITC by the 2007 WHO guidelines.¹ Specifically, HIV testing had to be initiated by a provider using either an opt-in or opt-out approach and conducted in a health care setting where individuals were seeking health care services other than HIV testing. Individuals, couples, or groups had to receive pre- and post-test counseling about HIV, an HIV test, and have the opportunity to learn their HIV infection status. The study looked at a range of behavioral, psychological, social, and biological outcomes. Of the 19 stud-
ies, 15 were conducted in sub-Saharan Africa and 4 in East and Southeast Asia. Twelve of the studies were conducted in ANC clinics, family planning clinics, or postpartum/child health clinics, 4 in TB clinics, 1 in an outpatient clinic, 1 in an STD clinic, and 1 in a methadone maintenance clinic.

Selection Criteria and Rigor Criteria of Studies Included in the Kennedy et al. systematic review
A study had to meet three criteria to be included in the analysis:

1. present behavioral, psychological, or biological outcomes related to HIV prevention in developing countries
2. use either a pre-/post- or multi-arm design

Studies that did not meet these criteria were excluded.

What More Do We Need to Know about Provider-Initiated Testing and Counseling Effectiveness?
The Kennedy et al. systematic review is consistent with past findings that HIV testing uptake increases with the PITC approach. Since HIV testing is a gateway to care and treatment seeking for those who test positive, and is important in decision-making about HIV prevention, this is an encouraging finding. However, the effect of HIV testing on other outcomes showed mixed results. Overall, the evidence suggests that the use of provider-initiated testing and counseling may result in increased condom use. Studies measuring nevirapine initiation in HIV-positive pregnant women, communication between partners, and various other outcomes had less conclusive results. In general, there are few negative outcomes associated with PITC, and PITC appears to generally lead to at least as much behavior change as client-initiated testing and counseling or VCT.

There were very few negative effects associated with provider-initiated HIV testing and counseling. However, one study comparing opt-in versus opt-out testing during ANC in Zimbabwe found that despite an overall increase in the number of women delivering in antenatal clinics, there was a reduction in the proportion of women who were known to deliver in antenatal clinics. The authors did not discuss this particular finding so it is difficult to contextualize, and external factors, including economic instability and associated service delivery challenges, may be unique to Zimbabwe. However, this finding does raise concerns that women tested in ANC under opt-out guidelines might not always be fully ready to adopt preventive health behaviors. The only other potentially negative effect was from an earlier study showing decreased rates of hormonal contraceptive use from 23% to 16% among HIV-positive women following HIV testing; the authors attributed this decline to a lack of ready access to hormonal contraceptives, possible fear of side effects, and possible increased condom use.

Future studies should include a focus on the messages provided in post-test counseling. In general, most of the studies included in this review provided little description of the type of post-test counseling conducted. Post-test counseling is an important part of PITC, as it provides an opportunity for clients to learn about HIV-related prevention, treatment, care and support services. Limited or inconsistent post-test counseling might potentially be a reason for some of the mixed outcomes identified in this study.

The findings of this review must be considered in light of several limitations. First, most of the included studies were conducted prior to the policy inclusion of PITC following the WHO guidelines in 2007. Although several countries such as Botswana, Lesotho, and Kenya had PITC-like policies in place when the WHO issued its guidance, studies conducted prior to this period may have been different than those conducted afterwards, and many early studies were not explicitly attempting to evaluate PITC. Over time, more studies conducted after the 2007 guidelines will be published and contribute to the evidence base for PITC.

Second, although the review included a variety of study designs, only one study was a group randomized trial. It is difficult to infer causality without randomized designs. Furthermore, the majority of studies included in the review took place in sub-Saharan Africa, so it is difficult to evaluate generalizability of
the findings elsewhere. PITC may be defined differently in various settings and must be adapted to local contexts.\(^5\)

Results may be subject to publication bias, where studies showing positive results are more likely to be published than studies showing negative results. In addition, there is the possibility that some articles that should have been included in the review were not identified by the search methods used.

**Additional Resources**

http://www.who.int/hiv/topics/vct/en/

USAID. HIV Counseling and Testing.

http://www.jhsph.edu/r2p/publications/VCT.pdf

**References**


**Terminology and Acronyms**

**ANC**
Antenatal care.

**ART**
Antiretroviral therapy.

**CITC**
Client-initiated testing and counseling.

**Confidence interval**
The range of values within which the “true value” can be expected to fall.

**Confidence level**
The likelihood that the “true value” will fall within the confidence interval.

**Effect size**
A measurement of the magnitude of change (e.g., the average point increase in a qualifying examination score from taking a test preparation course).

**Meta-analysis**
Analytic method that gathers information from multiple studies and combines them statistically to determine whether an intervention is effective.

**Odds ratio**
The ratio of the probability of an event occurring in one group to the probability of the same even occurring in a referent group; for example, an odds ratio of 2.0 for a condom promotion means that those in the treatment group were twice as likely as those in the control group to use condoms in last casual sexual encounter.

**PITC**
Provider-initiated testing and counseling.

**PMTCT**
Preventing mother-to-child transmission of HIV.

**TB**
Tuberculosis.

**VCT**
Voluntary counseling and testing.

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