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Bernard M. Branson, MD1

H. Hunter Handsfield, MD2

Margaret A. Lampe, MPH1

Robert S. Janssen, MD1

Allan W. Taylor, MD1

Sheryl B. Lyss, MD1

Jill E. Clark, MPH3

1Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed)

2Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed) and University of Washington, Seattle, Washington

3Northrup Grumman Information Technology (contractor with CDC)

The material in this report originated in the National Center for HIV/AIDS, Viral

Hepatitis, STD, and TB Prevention (proposed), Kevin A. Fenton, MD, PhD, Director; and the Division of HIV/AIDS Prevention, Timothy D. Mastro, MD, (Acting) Director.

Corresponding preparer: Bernard M. Branson, MD, Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed), 1600 Clifton Road, N.E., MS D-21, Atlanta, GA 30333. Telephone: 404-639-0900; Fax: 404-639-0897; E-mail: bbranson@cdc.gov.

Summary

These recommendations for human immunodeficiency virus (HIV) testing are intended for all health-care providers in the public and private sectors, including those working in hospital emergency departments, urgent care clinics, inpatient services, substance abuse treatment clinics, public health clinics, community clinics, correctional health-care facilities, and primary care settings. The recommendations address HIV testing in health-care settings only. They do not modify existing guidelines concerning HIV counseling, testing, and referral for persons at high risk for HIV who seek or receive HIV testing in nonclinical settings (e.g., community-based organizations, outreach settings, or mobile vans). The objectives of these recommendations are to increase HIV screening of patients, including pregnant women, in health-care settings; foster earlier detection of HIV infection; identify and counsel persons with unrecognized

HIV infection and link them to clinical and prevention services; and further reduce perinatal transmission of HIV in the United States. These revised recommendations update previous recommendations for HIV testing in health-care settings and for screening of pregnant women (CDC. Recommendations for HIV testing services for inpatients and outpatients in acute-care hospital settings. MMWR 1993;42[No. RR-2]:1--10; CDC. Revised guidelines for HIV counseling, testing, and referral. MMWR 2001;50[No. RR-19]:1--62; and CDC. Revised recommendations for HIV screening of pregnant women. MMWR 2001;50[No. RR-19]:63--85).

Major revisions from previously published guidelines are as follows:

For patients in all health-care settings

For pregnant women

Human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS) remain leading causes of illness and death in the United States. As of December 2004, an estimated 944,306 persons had received a diagnosis of AIDS, and of these, 529,113 (56%) had died (1). The annual number of AIDS cases and deaths declined substantially after 1994 but stabilized during 1999--2004 (1). However, since 1994, the annual number of cases among blacks, members of other racial/ethnic minority populations, and persons exposed through heterosexual contact has increased. The number of children reported with AIDS attributed to perinatal HIV transmission peaked at 945 in

1992 and declined 95% to 48 in 2004 (1), primarily because of the identification of HIV-infected pregnant women and
the effectiveness of antiretroviral prophylaxis in reducing mother-to-child transmission of HIV
(2).

By 2002, an estimated 38%--44% of all adults in the United States had been tested for HIV; 16--22 million
persons aged 18--64 years are tested annually for HIV
(3). However, at the end of 2003, of the approximately 1.0--1.2
million persons estimated to be living with HIV in the United States, an estimated one quarter (252,000--312,000
persons) were unaware of their infection and therefore unable to benefit from clinical care to reduce morbidity and mortality
(4). A number of these persons are likely to have transmitted HIV unknowingly
(5).

Treatment has improved survival rates dramatically, especially since the introduction of highly active
antiretroviral therapy (HAART) in 1995 (6). However, progress in effecting earlier diagnosis has been insufficient. During
1990--1992, the proportion of persons who first tested positive for HIV <1 year before receiving a diagnosis of AIDS was
51% (7); during 1993--2004, this proportion declined only modestly, to 39% in 2004
(1). Persons tested late in the course of their infection were more likely to be black or Hispanic and to have been exposed through heterosexual contact;
87% received their first positive HIV test result at an acute or referral medical care setting, and 65% were tested for
HIV antibody because of illness (8).

These recommendations update previous recommendations for HIV testing in health-care settings (9,10) and for screening of pregnant women (11). The objectives of these recommendations are to increase HIV screening of patients, including pregnant women, in health-care settings; foster earlier detection of HIV infection; identify and counsel persons with unrecognized HIV infection and link them to clinical and prevention services; and further reduce perinatal transmission of HIV in the United States.

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Background

Definitions

Diagnostic testing. Performing an HIV test for persons with clinical signs or symptoms consistent with HIV infection.

Screening. Performing an HIV test for all persons in a defined population (12).

Targeted testing. Performing an HIV test for subpopulations of persons at higher risk, typically defined on the basis of behavior, clinical, or demographic characteristics (9).

Informed consent. A process of communication between patient and provider through which an informed patient

can choose whether to undergo HIV testing or decline to do so. Elements of informed consent typically include

providing oral or written information regarding HIV, the risks and benefits of testing, the implications of HIV test results,

how test results will be communicated, and the opportunity to ask

questions.

Opt-out screening. Performing HIV screening after

notifying the patient that 1) the test will be performed and 2)

the patient may elect to decline or defer testing. Assent is

inferred unless the patient declines testing.

HIV-prevention counseling. An interactive process of

assessing risk, recognizing specific behaviors that increase

the risk for acquiring or transmitting HIV, and developing a plan to take specific steps to reduce risks

(13).

Evolution of HIV Testing Recommendations in Health-Care Settings and for Pregnant Women

In 1985, when HIV testing first became available, the main goal of such testing was to protect the blood

supply. Alternative test sites were established to deter persons from using blood bank testing to learn their HIV status. At

that time, professional opinion was divided regarding the value of HIV testing and whether HIV testing should

be encouraged because no consensus existed regarding whether a positive test predicted transmission to sex partners or

from mother to infant (14). No effective treatment existed, and counseling was designed in part to ensure that persons tested were aware that the meaning of positive test results was uncertain.

During the next 2 years, the implications of positive HIV serology became evident, and in 1987, the United States Public Health Service (USPHS) issued guidelines making HIV counseling and testing a priority as a prevention strategy for persons most likely to be infected or who practiced high-risk behaviors and recommended routine testing of all persons seeking treatment for STDs, regardless of health-care setting (15). "Routine" was defined as a policy to provide these services to all clients after informing them that testing would be conducted (15).

In 1993, CDC recommendations for voluntary HIV counseling and testing were extended to include hospitalized patients and persons obtaining health care as outpatients in acute-care hospital settings, including emergency departments (EDs) (10). Hospitals with HIV seroprevalence rates of >1% or AIDS diagnosis rates of >1 per 1,000 discharges were encouraged to adopt a policy of offering voluntary HIV counseling and testing routinely to all patients aged 15--54 years. Health-care providers in acute-care settings were encouraged to structure counseling and testing procedures to facilitate confidential, voluntary participation and to include basic information regarding the medical implications of the test, the option to receive more information,

and documentation of informed consent

(10). In 1994, guidelines for counseling and testing persons with high-risk behaviors specified prevention

counseling to develop specific prevention goals and strategies for each person (client-centered counseling)

(16). In 1995, after perinatal transmission

of HIV was demonstrated to be substantially reduced by administration of zidovudine to HIV-infected pregnant

women and their newborns, USPHS recommended that all pregnant women be counseled and

encouraged to undergo voluntary testing for HIV

(17,18).

In 2001, CDC modified the recommendations for pregnant women to emphasize HIV screening as a routine part

of prenatal care, simplification of the testing process so pretest counseling would not pose a barrier, and flexibility of the

consent process to allow multiple types of informed consent

(11). In addition, the 2001 recommendations for HIV testing in

health-care settings were extended to include multiple additional clinical venues in both private and public health-care

sectors, encouraging providers to make HIV counseling and testing more accessible and

acknowledging their need for flexibility

(9). CDC recommended that HIV testing be offered routinely to all

patients in high HIV-prevalence health-care settings. In

low prevalence settings, in which the majority of clients are at minimal risk, targeted HIV testing on the basis of risk screening

was considered more feasible for identifying limited numbers of HIV-infected persons (9).

In 2003, CDC introduced the initiative Advancing HIV Prevention: New Strategies for a Changing Epidemic (19). Two key strategies of this initiative are 1) to make HIV testing a routine part of medical care on the same voluntary basis as other diagnostic and screening tests and 2) to reduce perinatal transmission of HIV further by universal testing of all pregnant women and by using rapid tests during labor and delivery or postpartum if the mother was not screened prenatally (19). In its technical guidance, CDC acknowledged that prevention counseling is desirable for all persons at risk for HIV but recognized that such counseling might not be appropriate or feasible in all settings (20). Because time constraints or discomfort with discussing their patients' risk behaviors caused some providers to perceive requirements for prevention counseling and written informed consent as a barrier (12,21--23), the initiative advocated streamlined approaches.

In March 2004, CDC convened a meeting of health-care providers, representatives from professional associations, and local health officials to obtain advice concerning how best to expand HIV testing, especially in high-volume, high-prevalence acute-care settings. Consultants recommended simplifying the HIV screening process to make it more feasible and less costly and advocated more frequent diagnostic testing of patients with symptoms. In April 2005, CDC

initiated a comprehensive review of the literature regarding HIV testing in health-care settings and, on the basis of published evidence and lessons learned from CDC-sponsored demonstration projects of HIV screening in health-care facilities, began to prepare recommendations to implement these strategies. In August 2005, CDC invited health-care providers, representatives from public health agencies and community organizations, and persons living with HIV to review an outline of proposed recommendations. In November 2005, CDC convened a meeting of researchers, representatives of professional health-care provider organizations, clinicians, persons living with HIV, and representatives from community organizations and agencies overseeing care of HIV-infected persons to review CDC's proposed recommendations.

Before final revision of these recommendations, CDC described the proposals at national meetings of researchers and health-care providers and, in March 2006, solicited peer review by health-care professionals, in compliance with requirements of the Office of Management and Budget for influential scientific assessments, and invited comment from multiple professional and community organizations. The final recommendations were further refined on the basis of comments from these constituents.

Rationale for Routine Screening for HIV Infection

Previous CDC and U.S. Preventive Services Task Force guidelines for HIV testing

recommended routine
counseling and testing for persons at high risk for HIV and for those in acute-care settings in which HIV prevalence was
>1% (9,10,24). These guidelines proved difficult to implement because 1) the cost of HIV screening often is not
reimbursed, 2) providers in busy health-care settings often lack the time necessary to conduct risk assessments and might
perceive counseling requirements as a barrier to testing, and 3) explicit information regarding HIV prevalence typically is
not available to guide selection of specific settings
for screening (25--29).

These revised CDC recommendations advocate routine voluntary HIV screening as a normal part of medical
practice, similar to screening for other treatable conditions. Screening is a basic public health tool used to
identify unrecognized health conditions so treatment can be offered before symptoms develop and, for communicable diseases,
so interventions can be implemented to reduce the likelihood of continued transmission

(30).

HIV infection is consistent with all generally accepted criteria that justify screening: 1) HIV infection is a
serious health disorder that can be diagnosed before symptoms develop; 2) HIV can be detected by reliable, inexpensive,
and noninvasive screening tests; 3) infected patients have years of life to gain if treatment is initiated early, before
symptoms develop; and 4) the costs of screening are reasonable in relation to the

anticipated benefits
(30). Among pregnant women, screening has proven substantially more effective than risk-based testing for detecting unsuspected
maternal HIV infection and preventing perinatal transmission
(31--33).

Rationale for New Recommendations

Often, persons with HIV infection visit health-care settings (e.g., hospitals, acute-care clinics, and sexually
transmitted disease [STD] clinics) years before receiving a diagnosis but are not tested for HIV
(34--36). Since the 1980s, the demographics of the HIV/AIDS epidemic in the United States have changed; increasing proportions of infected
persons are aged <20 years, women, members of racial or ethnic minority populations, persons who reside outside
metropolitan areas, and heterosexual men and women who frequently are unaware that they are at risk for HIV
(37). As a result, the effectiveness of using risk-based testing to identify HIV-infected persons has diminished
(34,35,38,39).

Prevention strategies that incorporate universal HIV screening have been highly effective. For example, screening
blood donors for HIV has nearly eliminated transfusion-associated HIV infection in the United States
(40). In addition, incidence of pediatric HIV/AIDS in the United States has
declined substantially since the 1990s, when

prevention strategies began to include specific recommendations for routine HIV testing of pregnant women
(18,41). Perinatal transmission rates can be reduced to <2% with universal screening of pregnant women in combination
with prophylactic administration of antiretroviral drugs
(42,43), scheduled cesarean delivery when indicated
(44,45), and avoidance of breast feeding
(46).

These successes contrast with a relative lack of progress in preventing sexual transmission of HIV, for which
screening rarely is performed. Declines in HIV incidence
observed in the early 1990s have leveled and might even have reversed
in certain populations in recent years
(47,48). Since 1998, the estimated number of new infections has remained stable
at approximately 40,000 annually (49). In 2001, the Institute of Medicine (IOM) emphasized prevention services
for HIV-infected persons and recommended policies for
diagnosing HIV infections earlier to increase the number of
HIV-infected persons who were aware of their infections and who were offered clinical and prevention services
(37). The
majority of persons who are aware of their HIV infections substantially reduce sexual behaviors that might transmit
HIV after they become aware they are infected
(5). In a meta-analysis of findings from eight studies, the prevalence
of unprotected anal or vaginal intercourse with uninfected partners was on average 68% lower for HIV-infected

persons who were aware of their status than it was for HIV-infected persons who were unaware of their status (5). To increase diagnosis of HIV infection, destigmatize the testing process, link clinical care with prevention, and ensure immediate access to clinical care for persons with newly identified HIV infection, IOM and other health-care professionals with expertise (25,37,50,51) have encouraged adoption of routine HIV testing in all health-care settings.

Routine prenatal HIV testing with streamlined counseling and consent procedures has increased the number of pregnant women tested substantially (52). By contrast, the number of persons at risk for HIV infection who are screened in acute-care settings remains low, despite repeated recommendations in support of routine risk-based testing in health-care settings (9,10,15,34,53,54). In a survey of 154 health-care providers in 10 hospital EDs, providers reported caring for an average of 13 patients per week suspected to have STDs, but only 10% of these providers encouraged such patients to be tested for HIV while they were in the ED (54). Another 35% referred patients to confidential HIV testing sites in the community; however, such referrals have proven ineffective because of poor compliance by patients (55). Reasons cited for not offering HIV testing in the ED included lack of established mechanisms to ensure follow-up (51%), lack of the certification perceived as necessary to provide counseling (45%), and belief that the testing process was too time-consuming (19%) (54).

With the institution of HIV screening in certain hospitals and EDs, the percentage of patients who test positive (2%--7%) often has exceeded that observed nationally at publicly funded HIV counseling and testing sites (1.5%) and STD clinics (2%) serving persons at high risk for HIV (53,56--59). Because patients rarely were seeking testing when screening was offered at these hospitals, HIV infections often were identified earlier than they might otherwise have been (29). Targeted testing programs also have been implemented in acute-care settings; nearly two thirds of patients in these settings accept testing, but because risk assessment and prevention counseling are time-consuming, only a limited proportion of eligible patients can be tested (29). Targeted testing on the basis of risk behaviors fails to identify a substantial number of persons who are HIV infected (34,35,39). A substantial number of persons, including persons with HIV infection, do not perceive themselves to be at risk for HIV or do not disclose their risks (53,56,59). Routine HIV testing reduces the stigma associated with testing that requires assessment of risk behaviors (60--63). More patients accept recommended HIV testing when it is offered routinely to everyone, without a risk assessment (54,56).

In 1999, to increase the proportion of women tested for HIV, IOM recommended 1) adopting a national policy of universal HIV testing of pregnant women with patient notification (opt-out screening) as a routine component

of prenatal care, 2) eliminating requirements for extensive pretest counseling while requiring provision of basic
information regarding HIV, and 3) not requiring explicit written consent to be tested for HIV
(12). Subsequent studies have indicated that these policies, as proposed by IOM and other professional organizations
(12,64,65), reflect an ethical balance among public health goals, justice, and individual rights
(66,67). Rates of HIV screening are consistently
higher at settings that provide prenatal and STD services using opt-out screening than at opt-in programs, which require
pre-test counseling and explicit written consent
(52,68--74). Pregnant women express less anxiety with opt-out
HIV screening and do not find it difficult to decline a test
(68,74). In 2006, approximately 65% of U.S. adults
surveyed concurred that HIV testing should be treated the same as screening for any other disease, without special
procedures such as written permission from the patient
(75).

Adolescents aged 13--19 years represent new cohorts of persons at risk, and prevention efforts need to be repeated
for each succeeding generation of young persons
(63). The 2005 Youth Risk Behavior Survey indicated that 47% of
high school students reported that they had had sexual intercourse at least once, and 37% of sexually active students had
not used a condom during their most recent act of sexual intercourse
(76). More than half of all HIV-infected adolescents

are estimated not to have been tested and are unaware of their infection (77,78). Among young (aged 18--24 years) men who have sex with men (MSM) surveyed during 2004--2005 in five U.S. cities, 14% were infected with HIV; 79% of these HIV-infected MSM were unaware of their infection (56). The American Academy of Pediatrics recommends that clinicians obtain information from adolescent patients regarding their sexual activity and inform them how to prevent HIV infection (79). Evidence indicates that adolescents prefer to receive this information from their health-care providers rather than from their parents, teachers, or friends (80). However, fewer than half of clinicians provide such guidance (81). Health-care providers' recommendations also influence adolescents' decision to be tested. Among reasons for HIV testing provided by 528 adolescents who had primary care providers, 58% cited their provider's recommendation as their reason for testing (82).

The U.S. Preventive Services Task Force recently recommended that clinicians screen for HIV all adults and adolescents at increased risk for HIV, on the basis that when HIV is diagnosed early, appropriately timed interventions, particularly HAART, can lead to improved health outcomes, including slower clinical progression and reduced mortality (24). The Task Force also recommended screening all pregnant women, regardless of risk, but made no recommendation for

or against routinely screening asymptomatic adults and adolescents with no identifiable risk factors for HIV. The Task Force concluded that such screening would detect additional patients with HIV, but the overall number would be limited, and the potential benefits did not clearly outweigh the burden on primary care practices or the potential harms of a general HIV screening program (24,83). In making these recommendations, the Task Force considered how many patients would need to be screened to prevent one clinical progression or death during the 3-year period after screening. On the basis of evidence available for its review, the Task Force was unable to calculate benefits attributable to the prevention of secondary HIV transmission to partners (84). However, a recent meta-analysis indicated that HIV-infected persons reduced high-risk behavior substantially when they became aware of their infection (5). Because viral load is the chief biologic predictor of HIV transmission (85), reduction in viral load through timely initiation of HAART might reduce transmission, even for HIV-infected patients who do not change their risk behavior (86). Estimated transmission is 3.5 times higher among persons who are unaware of their infection than among persons who are aware of their infection and contributes disproportionately to the number of new HIV infections each year in the United States (87). In theory, new sexual HIV infections could be reduced >30% per year if all infected persons could learn their HIV status and adopt changes in behavior similar to those adopted by persons

already aware of their infection (87).

Recent studies demonstrate that voluntary HIV screening is cost-effective even in health-care settings in which HIV prevalence is low (26,27,86). In populations for which prevalence of undiagnosed HIV infection is >0.1%, HIV screening is as cost-effective as other established screening programs for chronic diseases (e.g., hypertension, colon cancer, and breast cancer) (27,86). Because of the substantial survival advantage resulting from earlier diagnosis of HIV infection when therapy can be initiated before severe immunologic compromise occurs, screening reaches conventional benchmarks for cost-effectiveness even before including the important public health benefit from reduced transmission to sex partners (86).

Linking patients who have received a diagnosis of HIV infection to prevention and care is essential. HIV screening without such linkage confers little or no benefit to the patient. Although moving patients into care incurs substantial costs, it also triggers sufficient survival benefits that justify the additional costs. Even if only a limited fraction of patients who receive HIV-positive results are linked to care, the survival benefits per dollar spent on screening represent good comparative value (26,27,88).

The benefit of providing prevention counseling in conjunction with HIV testing is less clear. HIV counseling with testing has been demonstrated to be an effective intervention for HIV-infected participants, who increased their

safer behaviors and decreased their risk behaviors; HIV counseling and testing as implemented in the studies had little
effect on HIV-negative participants (89). However, randomized controlled trials have demonstrated that the nature
and duration of prevention counseling might influence its effectiveness
(90,91). Carefully controlled, theory-based prevention counseling in STD clinics has helped HIV-negative participants reduce their risk behaviors compared
with participants who received only a didactic prevention message from health-care providers
(90). A more intensive intervention among HIV-negative MSM at high risk, consisting of 10 theory-based individual counseling
sessions followed by maintenance sessions every 3
months, resulted in reductions in unprotected sex with partners who
were HIV infected or of unknown status, compared with MSM who received structured prevention counseling only
twice yearly (91).

Timely access to diagnostic HIV test results also improves health outcomes. Diagnostic testing in health-care
settings continues to be the mechanism by which nearly half of new HIV infections are identified. During 2000--2003,
of persons reported with HIV/AIDS who were interviewed in 16 states, 44% were tested for HIV because of illness
(8). Compared with HIV testing after patients were admitted to the hospital, expedited diagnosis by rapid HIV testing
in the ED before admission led to shorter hospital stays, increased the number of patients aware of their HIV status
before

discharge, and improved entry into outpatient care
(92). However, at least 28 states have laws or regulations that
limit health-care providers' ability to order diagnostic testing for HIV infection if the patient is unable to give consent
for HIV testing, even when the test results are likely to alter the patient's diagnostic or therapeutic management
(93).

Of the 40,000 persons who acquire HIV infection each year, an estimated 40%--90% will experience symptoms
of acute HIV infection (94--96), and a substantial number will seek medical care. However, acute HIV infection often
is not recognized by primary care clinicians because the symptoms
resemble those of influenza, infectious
mononucleosis, and other viral illnesses
(97). Acute HIV infection can be diagnosed by detecting HIV RNA in plasma from
persons with a negative or indeterminate HIV antibody test. One study based on national ambulatory medical care
surveys estimated that the prevalence of acute HIV infection was 0.5%--0.7% among ambulatory patients who sought care
for fever or rash (98). Although the long-term benefit of HAART during acute HIV infection has not been
established conclusively (99), identifying primary HIV infection can reduce the spread of HIV that might otherwise occur
during the acute phase of HIV disease
(100,101).

Perinatal HIV transmission continues to occur, primarily among women who lack prenatal care or who were

not offered voluntary HIV counseling and testing during pregnancy. A substantial proportion of the estimated
144--236 perinatal HIV infections in the United States each year can be attributed to the lack of timely HIV testing
and treatment of pregnant women (102). Multiple barriers to HIV testing have been identified, including language
barriers; late entry into prenatal care; health-care providers' perceptions that their patients are at low risk for HIV; lack of time
for counseling and testing, particularly for rapid testing during labor and delivery; and state regulations
requiring counseling and separate informed consent
(103). A survey of 653 obstetrical providers in North Carolina suggested
that not all health-care providers embrace universal testing of pregnant women; the strength with which
providers recommended prenatal testing to their patients and the numbers of women tested
depended largely on the providers' perception of the patients' risk behaviors
(21). Data confirm that testing rates are higher when HIV tests are included
in the standard panel of screening tests for all pregnant women
(52,69,104). Women also are much more likely to
be tested if they perceive that their health-care provider strongly recommends HIV testing
(105). As universal prenatal screening has become more widespread, an increasing proportion of pregnant women who had undiagnosed
HIV infection at the time of delivery were found to have seroconverted during pregnancy
(106). A second HIV test during the third trimester for women in settings with

elevated HIV incidence (>17 cases per 100,000 person-years) is cost-effective and might result in substantial reductions in mother-to-child HIV transmission (107).

Every perinatal HIV transmission is a sentinel health event, signaling either a missed opportunity for prevention or, more rarely, a failure of interventions to prevent perinatal transmission. When these infections occur, they underscore the need for improved strategies to ensure that all pregnant women undergo HIV testing and, if found to be HIV positive, receive proper interventions to reduce their transmission risk and safeguard their health and the health of their infants.

Recommendations for Adults and Adolescents

CDC recommends that diagnostic HIV testing and opt-out HIV screening be a part of routine clinical care in all health-care settings while also preserving the patient's option to decline HIV testing and ensuring a provider-patient relationship conducive to optimal clinical and preventive care. The recommendations are intended for providers in all health-care settings, including hospital EDs, urgent-care clinics, inpatient services, STD clinics or other venues offering clinical STD services, tuberculosis (TB) clinics, substance abuse treatment clinics, other public health clinics, community clinics, correctional health-care facilities, and primary care settings. The guidelines address HIV testing

in health-care settings only; they do not modify existing guidelines concerning HIV counseling, testing, and referral
for persons at high risk for HIV who seek or receive HIV testing in nonclinical settings (e.g.,
community-based organizations, outreach settings, or mobile vans)
(9).

Screening for HIV Infection

In all health-care settings, screening for HIV infection should be performed routinely for all patients aged
13--64 years. Health-care providers should initiate screening unless prevalence of undiagnosed HIV infection in
their patients has been documented to be <0.1%. In the
absence of existing data for HIV prevalence,
health-care
providers should initiate voluntary HIV screening until they establish that the diagnostic yield is <1 per
1,000 patients screened, at which point such screening is no longer warranted.
All patients initiating treatment for TB should be screened routinely for HIV infection
(108).
All patients seeking treatment for STDs, including all patients attending STD clinics, should be
screened routinely for HIV during each visit for a new complaint, regardless of whether the patient is known or suspected
to have specific behavior risks for HIV infection.

Repeat Screening

Aspects of these recommendations that remain unchanged from previous recommendations are as follows:

Aspects of these recommendations that differ from previous recommendations are as follows:

These guidelines reiterate the recommendation for universal HIV screening early in pregnancy but advise
simplifying the screening process to maximize opportunities for women to learn their HIV status during pregnancy, preserving
the woman's option to decline HIV testing, and ensuring a
provider-patient relationship conducive to optimal clinical
and preventive care. All women should receive HIV screening consistent with the recommendations for adults
and adolescents. HIV screening should be a routine component of preconception care, maximizing opportunities for
all women to know their HIV status before conception
(109). In addition, screening early in pregnancy enables
HIV-infected women and their infants to benefit from appropriate and timely interventions (e.g., antiretroviral
medications [43], scheduled cesarean delivery
[44], and avoidance of breastfeeding*
[46]). These recommendations are intended
for clinicians who provide care to pregnant women and newborns and for health policy makers who have responsibility
for these populations.

HIV Screening for Pregnant Women and Their Infants

Universal Opt-Out Screening

Addressing Reasons for Declining Testing

Timing of HIV Testing

Rapid Testing During Labor

Postpartum/Newborn Testing

Confirmatory Testing

Aspects of these recommendations that remain unchanged from previous recommendations are as follows:

Aspects of these recommendations that differ from previous recommendations are as follows:

Persons with a diagnosis of HIV infection need a thorough evaluation of their clinical status and immune function

to determine their need for antiretroviral treatment or other therapy. HIV-infected persons should receive or be referred

for clinical care promptly, consistent with USPHS guidelines for management of HIV-infected persons

(96). HIV-exposed infants should receive appropriate antiretroviral prophylaxis to prevent perinatal HIV transmission as soon as

possible after birth (42) and begin trimethoprim-sulfamethoxazole prophylaxis at age 4--6 weeks to prevent
Pneumocystis pneumonia (112). They should receive subsequent clinical monitoring and diagnostic testing to determine their
HIV infection status (113).

Partner Counseling and Referral

When HIV infection is diagnosed, health-care providers should strongly encourage patients to disclose their
HIV status to their spouses, current sex partners, and previous sex partners and recommend that these partners be tested
for HIV infection. Health departments can assist patients by notifying, counseling, and providing HIV testing for
partners without disclosing the patient's identity
(114). Providers should inform patients who receive a new diagnosis of
HIV infection that they might be contacted by health department staff for a voluntary interview to discuss notification
of their partners.

Special Considerations for Screening Adolescents

Although parental involvement in an adolescent's health care is usually desirable, it typically is not required when
the adolescent consents to HIV testing. However, laws concerning consent and confidentiality for HIV care differ
among states (79). Public health statutes and legal precedents allow for evaluation and

treatment of minors for STDs
without parental knowledge or consent, but not every state has defined HIV infection explicitly as a condition for which
testing
or treatment may proceed without parental consent. Health-care providers should endeavor to respect an
adolescent's request for privacy (79). HIV screening should be discussed with all adolescents and encouraged for those who
are sexually active. Providing information regarding HIV infection, HIV testing, HIV transmission, and implications
of infection should be regarded as an essential component of the anticipatory guidance provided to all adolescents as part of primary care
(79).

Prevention Services for HIV-Negative Persons

Recommended thresholds for screening are based on
estimates of the prevalence of undiagnosed HIV infection in
U.S. health-care settings, for which no accurate recent data exist. The optimal frequency for retesting is not yet known.
Cost-effectiveness parameters for HIV screening were based on
existing program models, all of which include a
substantial counseling component, and did not consistently consider secondary infections averted as a benefit of screening. To
assess the need for revised thresholds for screening adults and adolescents or repeat screening of pregnant women and
to confirm their continued effectiveness, screening programs should monitor the yield

of new diagnoses of HIV
infection, monitor costs, and evaluate whether patients with a diagnosis of HIV infection are linked to and remain engaged in
care. With minor modifications, laboratory information systems might provide a practical alternative for clinicians to use
in determining HIV prevalence among their patients who are screened for HIV.

Primary Prevention and HIV Testing in Nonclinical Settings

These revised recommendations are designed to increase HIV screening in health-care settings. Often, however,
the population most at risk for HIV includes persons who are least likely to interact with the conventional
health-care system (47,116). The need to maintain primary prevention
activities, identify persons at high risk for HIV who
could benefit from prevention services, and provide HIV testing for persons who are at high risk for HIV in nonclinical
venues remains undiminished. New approaches (e.g., enlisting HIV-infected persons and HIV-negative persons at high risk
for HIV to recruit persons from their social, sexual, and drug-use networks for counseling, testing, and referral)
have demonstrated considerable efficacy for identifying persons who were previously unaware of their HIV infection
(117).

Regulatory and Legal Considerations

These public health recommendations are based on best practices and are intended to comply fully with the ethical principles of informed consent (67). Legislation related to HIV and AIDS has been enacted in every state and the District of Columbia (118), and specific requirements related to informed consent and pretest counseling differ among states (119). Certain states, local jurisdictions, or agencies might have statutory or other regulatory impediments to opt-out screening, or they might impose other specific requirements for counseling, written consent, confirmatory testing, or communicating HIV test results that conflict with these recommendations. Where such policies exist, jurisdictions should consider strategies to best implement these recommendations within current parameters and consider steps to resolve conflicts with these recommendations.

Other Guidelines

Issues that fall outside the scope of these recommendations are addressed by other USPHS guidelines (Box 1). Because concepts relevant to HIV management evolve rapidly, USPHS updates recommendations periodically. Current updates are available from the National Institutes of Health at http://AIDSinfo.nih.gov. Additional guidelines have been published by CDC and the U.S. Department of Health and Human Services, Office for Civil Rights

(Box 2).

Acknowledgment

Ida M. Onorato, MD, Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB
Prevention (proposed), contributed to the writing and revision of this report.

References

* To eliminate the risk for postnatal transmission, HIV-infected women in the United States should not breastfeed. Support services for use of appropriate
breast milk substitutes should be provided when necessary. In international settings, UNAIDS and World Health Organization recommendations for HIV
and breastfeeding should be followed (46).

† A second HIV test in the third trimester is as cost-effective as other common health interventions when HIV incidence among women of childbearing age is
>17 HIV cases per 100,000 person-years
(107). In 2004, in jurisdictions with available data on HIV case rates, a rate of 17 new HIV diagnoses per year
per 100,000 women aged 15--45 years was associated with an AIDS case rate of at least nine AIDS diagnoses per year per 100,000 women aged 15--45
years (CDC, unpublished data, 2005). As of 2004, the jurisdictions listed above exceeded these thresholds. The list of specific jurisdictions where a second test in
the third trimester is recommended will be updated periodically based on surveillance data.

Consultants

Membership List, November 2005 Chairpersons: Bernard M. Branson, MD, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed), CDC;

H. Hunter Handsfield, MD, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed) and University of Washington,

Seattle, Washington.

Presenters: Terje Anderson, National Association of People with AIDS, Silver Spring, Maryland; Yvette Calderon, MD, Albert Einstein College

of Medicine, Bronx, New York; Carlos del Rio, Emory University School of Medicine, Atlanta, Georgia; Bambi Gaddist, PhD, South Carolina

African American HIV/AIDS Council, Columbia, South Carolina; Roberta Glaros, MA, New York State Department of Health, Albany, New York; Howard

A. Grossman, MD, American Academy of HIV Medicine, Washington, DC; Sara Guerry, MD, Los Angeles Sexually Transmitted Disease Program,

Los Angeles, California; Scott D. Halpern, MD, PhD, University of Pennsylvania, Philadelphia, Pennsylvania; Kim Hamlett-Berry, PhD, Department

of Veterans Affairs, Washington, DC; Scott Kellerman, MD, New York City Bureau of HIV/AIDS Prevention and Control, New York, New York; James

H. Lee, Texas Department of State Health Services, Austin, Texas; Jason Leider, MD, PhD, Albert Einstein College of Medicine, Bronx, New York; A.

David Paltiel, PhD, Yale University School of Medicine, New Haven, Connecticut; Liisa Randall, PhD, Michigan Department of Community Health,

Okemos, Michigan; Cornelis A. Rietmeijer, MD, PhD, Denver Public Health Department, Denver, Colorado; Robert A. Weinstein, MD, Rush Medical

College, Chicago, Illinois; Noel Zuniga, Bienestar Human Services, Inc., Los Angeles, California.

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William C. Page, William C. Page, Inc., Albuquerque, New Mexico.

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Chicago, Illinois; Daniel Bush, North Jersey Community Research Initiative, Newark, New Jersey; Ahmed Calvo, MD, Health Resources and
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Carolina Department of Health and Environmental Control, Columbia, South Carolina; Enid Eck, Kaiser Permanente, Pasadena, California; Magdalena

Esquivel, Los Angeles Department of Health Services, Los Angeles, California; Joe Fuentes, Houston Area Community Services, Inc., Houston, Texas;

Donna Futterman, MD, American Academy of Pediatrics and Albert Einstein College of Medicine, Bronx, New York; Bambi Gaddist, PhD, South

Carolina African American HIV/AIDS Council, Columbia, South Carolina; Roberta Glaros, MA, New York State Department of Health, Albany, New

York; Howard A. Grossman, MD, American Academy of HIV Medicine, Washington, DC; Sara Guerry, MD, Los Angeles Sexually Transmitted

Disease Program, Los Angeles, California; Scott D. Halpern, MD, PhD, University of Pennsylvania, Philadelphia, Pennsylvania; Kim Hamlett-Berry,

PhD, Department of Veterans Affairs, Washington, DC; Celine Hanson, MD, Baylor College of Medicine, Houston, Texas; Wilbert Jordan, MD,

National Medical Association and Drew University, Los Angeles, California; Scott Kellerman, MD, New York City Bureau of HIV/AIDS Prevention and

Control, New York, New York; David Lanier, MD, Agency for Healthcare Research and Quality, Rockville, Maryland; James H. Lee, Texas Department of

State Health Services, Austin, Texas; Jason Leider, MD, PhD, Albert Einstein College of Medicine, Bronx, New York; Elisa Luna, MSW, Washington,

DC; Robert Maupin, MD, American College of Obstetricians and Gynecologists and LSU Health Sciences Center, New Orleans, Louisiana; Jenny

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Detroit, Michigan; Susan Moskosky, MS, Office of Population Affairs, Rockville, Maryland;

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California; Nilda Soto, PROCEED, Inc., Elizabeth, New Jersey; Alice Stek, MD, University of Southern California School of Medicine, Los Angeles,

California; Monica Sweeney, MD, Bedford Stuyvesant Family Health Center, Inc., and National Association of Community Health Centers, Brooklyn, New

York; Donna Sweet, MD, Wichita, Kansas; Wanda Tabora, Iniciativa Communitaria de Investigacion, San Juan, Puerto Rico; Mark Thrun, MD, Denver

Public Health, Denver, Colorado; Robert A. Weinstein, MD, Rush Medical College, Chicago, Illinois; Carmen Zorilla, MD, University of Puerto Rico School

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Coordinator: Bernard M. Branson, MD, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed), CDC.

Project Manager: Samuel A. Martinez, MD, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (proposed), CDC.

CDC Presenters: Brian Boyett, MS, Bernard M. Branson, MD, H. Irene Hall, PhD, Margaret

A. Lampe, MPH, Sheryl B. Lyss, MD, Duncan

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