For the first 20 years of the human immunodeficiency virus (HIV) epidemic, case finding was focused on individuals at high risk, such as men who had sex with men and persons who injected drugs and their sex partners. At the same time, prevention efforts targeted seronegative persons, including the general population as well as those with high-risk behaviors. The epidemic in the United States peaked in the mid-1980s and has been steady at approximately 40,000 new cases annually since 1992.1

From the beginning of the epidemic, it was clear that persons with the acquired immunodeficiency syndrome (AIDS) were clustered in certain cities and neighborhoods. Before a serologic test was available, infected individuals were identified as they became ill and presented to hospitals for care for characteristic AIDS-defining illnesses. However, people with HIV infection were being admitted for more common diagnoses as well, such as bacterial pneumonia, and the duration of the epidemic had been more than 10 years when recurrent bacterial pneumonia was added to the surveillance case definition. In 1993, in an effort to identify HIV-infected individuals in acute care settings, the Centers for Disease Control and Prevention (CDC) urged all hospitals with a high seroprevalence of HIV (>1%) or high rates of AIDS diagnoses (at least 1 per 1000 discharged patients) to offer HIV testing and counseling to inpatients on a routine basis, even if they had been admitted for HIV-unrelated conditions.2

Despite these early recommendations, only 3 studies have been published assessing the utility of offering routine inpatient HIV testing. In this issue of Mayo Clinic Proceedings, Greenwald et al3 report a retrospective cohort study that evaluates 81 inpatients at a major hospital in Boston, Mass, who tested HIV positive between 1999 and 2003 and compares them to both the same number of inpatients who tested negative and to HIV-infected persons tested in an ambulatory care setting. Initially, testing was offered to inpatients referred by their physician, but by 2001 testing was expanded to all those admitted to the adult medical service. Studies have shown that many infected individuals do not undergo testing until late in the course of their HIV disease, when serious illness or an AIDS-defining condition requiring hospitalization has ensued; in a prior report, 41% of patients with newly diagnosed HIV were diagnosed as having AIDS within 1 year of testing positive.4 In the current study,3 79% of those who tested positive had a diagnosis of AIDS made concurrently on the basis of a clinical condition or a CD4 cell count lower than 200 cells/mm3. In a multivariate analysis, Greenwald et al demonstrate that the inpatients identified as having HIV infection had significantly lower CD4 cell counts and higher HIV viral loads than those whose diagnosis was made on an outpatient basis. As shown in their Figure 2, CD4 cell counts differed markedly among 3 discharge diagnosis categories—HIV related, possibly related, and unrelated—with the lowest counts in patients who had HIV-related diagnoses. Although some of the conditions categorized as “unrelated,” (eg, diarrhea, non-Hodgkin lymphoma, soft tissue infection, and viral syndrome) may have led to a small number of diagnoses that might have been classified as related or possibly related,5,6 it is unlikely that the ultimate outcome of this analysis would be changed given the magnitude of the differences between the related and unrelated groups.

Since mortality due to HIV disease plummeted in the mid-1990s as the result of the introduction and extensive use of highly potent combination antiretroviral therapy (in addition to effective prophylaxis for opportunistic infections), HIV prevalence has risen steadily. Recent increases in syphilis among HIV-seropositive persons and increases in HIV diagnoses among young men who have sex with

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men and among women, particularly in racial and ethnic minorities, have raised concerns about case finding and prevention efforts. According to the CDC, currently an estimated 252,000 to 312,000 persons in the United States are already infected with HIV but are unaware of their serostatus. As many as another 5 million people are at behavioral risk of potential infection due to unsafe sex and drug use, based on a household survey performed in 1996.

At present, 22% of all HIV testing is done in primary care settings, such as hospitals, emergency departments, and outpatient care sites, and 27% of all positive tests occur in the primary care arena. The development and recent licensing of 2 Food and Drug Administration–approved rapid HIV tests (OraQuick Rapid HIV-1 Antibody Test, OraSure Technologies, Inc, Bethlehem, Pa, and OraQuick Advance Rapid HIV 1/2 Antibody Test, OraSure) that can be administered and interpreted by trained nonprofessionals within 20 minutes have created an opportunity to overcome many of the traditional barriers to early diagnosis and treatment of HIV; historically, up to a third of persons tested at anonymous test sites fail to return for their test results, according to CDC data. Studies have shown that persons aware of their seropositive status are more likely to practice safer sex, with one study demonstrating a 68% decreased prevalence of unprotected vaginal or anal intercourse with HIV-negative partners. Because the continuing epidemic is largely fueled by individuals who are unaware of their HIV infection, the CDC has developed a serostatus approach to comprehensive case finding and prevention.

In 2003, the CDC unveiled a new plan called “Advancing HIV Prevention: New Strategies for a Changing Epidemic.” This campaign is focused on reducing barriers to the early diagnosis of HIV, increasing access to care, and providing ongoing prevention efforts to those already infected. It has 4 key initiatives, 3 of which involve testing more broadly for HIV infection: (1) incorporate HIV testing as part of routine medical care; (2) with the use of a new rapid HIV test, implement new models for HIV testing outside traditional medical settings, such as drug treatment programs, homeless shelters, and prisons; (3) prevent new infections by focusing on behavior changes for individuals already infected and their partners (“Prevention for Positives”), and (4) further decrease perinatal transmission by expanding testing for all pregnant women, including the use of a rapid test during labor and delivery or immediately postpartum. This focus on expanding testing; getting newly diagnosed individuals to obtain medical care; ensuring access to antiretroviral therapy to control patients’ viral loads, both to maintain their health and to reduce the likelihood of horizontal and vertical infection; and encouraging behavior change in seropositive persons all make great sense as public health policy. In an unpublished CDC study of 7236 newly diagnosed persons, the most frequent reason for seeking testing was illness (42%); only 10% of the HIV-positive men and 17% of the women were tested primarily because their health care professional offered or recommended testing. By involving physicians and other health care professionals more intensively in testing and prevention efforts, it is hoped that the health care professional-patient bond will have a greater influence on stemming the epidemic than do the currently separate HIV testing and care structures.

Moreover, there are worrisome growing racial and ethnic disparities among persons diagnosed with HIV infection, with the number of cases and diagnosis rates in black persons far exceeding those in white persons. We may not make adequate headway in stemming the rate of new infections in these groups until testing is more widespread and routine. In minority communities, the stigma attached to HIV infection is tremendous, as the “down low” phenomenon illustrates. This refers to black men who are bisexual but unwilling to share that fact with their female partners, who are unsuspecting of their potential exposure to HIV and other sexually transmitted diseases. As expected, the idea of “normalizing” testing—that is, including HIV testing as a routine part of an individual’s overall consent to receive care—for all persons between 13 and 64 years of age has raised some opposition. If a person does not want to be tested for HIV, he or she will have to “opt out,” that is, refuse the test, a distinct departure from the established policy of “opting in,” in which the caregiver or the patient has to specifically request and consent to an HIV test, whether anonymously or as a part of routine care. To enhance the feasibility of including testing as part of routine care, the CDC has recommended that clinicians dispense with pretest counseling, a cornerstone of the former recommendations. In this manner, the CDC hopes that the large number of persons unaware of their positive HIV status will be identified, referred for care, given antiretroviral therapy as appropriate, and educated about the risks of infecting others. This hopefully will further reduce transmission to others as a result of controlling viral replication and encouraging the use of safe-sex practices.

Human immunodeficiency virus–infected people and HIV-affected communities have also recognized the urgent need to halt the epidemic, as evidenced by the broad-based endorsement (by numerous lay and professional organizations) of the Campaign to End AIDS. The article on in-hospital testing in this issue of the Proceedings and the changes in federal health care policy regarding the expansion of testing should spur physicians and other health care
professionals to assume responsibility for identifying the quarter million individuals as yet undiagnosed.

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5. Centers for Disease Control and Prevention, Council of State and Territorial Epidemiologists, AIDS Program, Center for Infectious Diseases. Revision of the CDC surveillance case definition for acquired immunodeficiency syndrome. MMWR Morb Mortal Wkly Rep. 1987;36(suppl 1):1S-1SS.