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Unfinished Business — Expanding HIV Testing in Developing Countries

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When the Group of Eight (G8) major industrial countries (France, the United States, Britain, Germany, Japan, Italy, Canada, and Russia) made a commitment in July 2005 to work toward universal access by 2010 to the prevention and treatment of human immunodeficiency virus (HIV) infection and AIDS, the move brought to light an HIV-testing emergency: knowledge of serologic status is required for the appropriate targeting of services and interventions. The World Health Organization and the Joint United Nations Program on HIV/AIDS recently published revised guidelines for HIV testing, but field experience in Africa indicates that testing must be greatly expanded. It seems clear that to maximize benefit, a public health approach to HIV testing and treatment — including case finding and testing of partners — should become the norm.

Meeting the targets for antiretroviral treatment that had been set for the end of 2005 would have required testing as many as 180 million persons worldwide annually, far exceeding the current rates. Current guidelines recommend offering testing to persons with symptoms and signs that are potentially attributable to HIV infection or AIDS. However, since advanced immunodeficiency can be clinically silent, it would be more effective to offer testing to all patients attending health care facilities in locations with a high prevalence of HIV infection. Botswana, with a prevalence of more than 35 percent among people 15 to 49 years of age, has initiated such routine testing at clinics and hospitals nationwide. Kenya is increasing routine testing of pregnant women, hospitalized patients, and patients with tuberculosis; with an “opt-out” approach, less than 20 percent have chosen not to be tested. With routine testing of inpatients in selected hospitals in Uganda, 95 percent of inpatients agreed to be tested, and the prevalence of HIV was discovered to exceed 50 percent.

Current guidelines restrict the use of routine testing to settings in which antiretroviral therapy is available. We believe that the recommendations should support routine testing wherever basic HIV care and prevention are available. Such a change would improve efforts at prevention, allow infected persons to receive care such as cotrimoxazole prophylaxis, and...
normalize HIV testing. Prophylaxis against opportunistic infections is within the reach of even the poorest countries, and the identification of those who will need it benefits the entire public health system. In the United States, it is cost-effective to provide routine testing and counseling to all patients in hospitals with a prevalence of HIV of more than 1 percent, a practice recommended by the Centers for Disease Control and Prevention (CDC); in Africa, the prevalence among hospitalized patients is often greater than 50 percent.

Providing testing to family members of infected persons is critical; 50 percent of the spouses of infected African adults are also infected. The testing of partners is the first step toward providing care for those who are infected — and protecting those who are not. Knowledge of HIV status is associated with reductions in high-risk behavior; and providing preventive services, including condoms to HIV-discordant couples, decreases the risk of transmission by 80 percent. The children of infected women have an increased likelihood of infection, and pediatric HIV infection may indicate the presence of infection in other family members. The identification and treatment of HIV-infected mothers are important for their children, since their risk of death is at least doubled if their mother dies.

The prevalence of HIV infection among adolescents, especially young women, is high in much of Africa. Counseling and testing among young people is an important preventive strategy, although it may be ethically and legally challenging. Although premarital HIV testing is not cost-effective where prevalence is low, it is an important preventive practice in regions with generalized epidemics. Careful guidance is required, however, to determine how to implement such testing without coercion and how to limit the negative social consequences of a premarital diagnosis of HIV infection, especially for young women. Approximately 2.3 million children worldwide are living with HIV infection, and children account for 18 percent of AIDS-related deaths. Signs of HIV disease are often nonspecific, and more than half of infected African children die before two years of age. Antiretroviral therapy, therefore, must be started early, and universal HIV testing in pediatric clinical settings — an issue omitted from recent guidelines — will be required. Pediatric testing is complex: the possible presence of passively transferred maternal antibody limits diagnostic confidence until 18 months of age, and venipuncture is difficult. Moreover, exposure to HIV may continue during breast-feeding. Algorithms for testing children of various ages should be evaluated and endorsed by international public health authorities. For younger children, the algorithms could include rapid testing, with positive results verified by a central laboratory — a system being examined in Uganda and Kenya.

Since the denial of an HIV test may restrict an infected person’s access to life-prolonging therapy, health care systems must determine whose role it is to grant permission for the testing of children, including orphans with no official guardians. In some countries, pediatric testing has been avoided for fear that HIV-infected children might be abandoned or neglected by families or caregivers, but this has not, to our knowledge, been documented. Guidance is also required with regard to the appropriate timing and methods of disclosing to children their HIV status.

In Africa, AIDS-related mortality is high among the providers of essential services — not only health care workers, but also teachers, police, and the military — so that stability, security, and economic development...
of the G8 to universal access necessitate a massive expansion of HIV testing. The ideal that all citizens of high-prevalence countries should know their serologic status and should be tested repeatedly over the course of their lives should become explicit targets of preventive efforts. Increased rates of testing will, of course, generate other challenges, such as the provision of preventive services for HIV-infected persons, the disclosure of serologic status, and the notification of partners — all areas in which we must define the best practices for a new era.

The opinions and statements in this Perspective are those of the authors and do not represent the official policy, endorsement, or views of the CDC, the U.S. Public Health Service, or the U.S. Department of Health and Human Services. Dr. De Cock is the director of CDC–Kenya; Dr. Bunell is the associate director for science at CDC–Uganda; and Dr. Mermin is the director of CDC–Uganda. The other participants in the Kenya–Uganda HIV Testing Group were Elizabeth Marum, Ph.D., Barbara Marston, M.D., Dorothy Mbori-Ngacha, M.B., Ch.B., M.Med., and Laurence Marum, M.D., M.P.H., in Kenya, and Donna Kabatesi, M.B., Ch.B., M.P.H., in Uganda.