own policies, to blow the whistle within and without the agency, and generally to preserve its scientific independence?

All of us in public health, and not only CDC insiders, might want to ponder the solution proposed by Francis: specific legislation to protect CDC from political interference with necessary public health practice.

It is not an exaggeration to say that CDC is one of the great American institutions. Created with imagination, it took on the global as well as the domestic firefight against disease, and it has developed over the past half century into a wonderful instrument that might do more than armies for peace and friendship in the world. To protect this precious role, it must have the independence so crucial to scientific rationality and hence to its function. An analogy aptly drawn by Francis is the freedom of the Federal Reserve Board, given the independence of tenured terms, to rule on economics.

Health is no less vital, and all the more so in the face of the HIV epidemic. Our new government, in fulfilling its forceful commitments to change, needs to hear the whistles of those like Francis without waiting for them to leave office. □

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"Getting Real" about HIV in Adolescents

"Getting real" about the human immunodeficiency virus (HIV) in adolescents means acting on what is now known about the epidemic among youth. It is a time for bold steps, not timid reflection. Getting real means building upon four facts: (1) HIV is now present throughout the teenage community in the United States and around the world.[1] (2) Among sexually experienced people, adolescents have the highest rates of sexually transmitted diseases.[2,3] Consequently, HIV is likely to become even more widespread among adolescents during the 1990s.[4] (3) Sex education leads not to more sex but to more responsible sex.[5] (4) Condom use will increase substantially only if actively promoted and if condoms are made easily available in schools and elsewhere.

HIV among adolescents remained an invisible epidemic until quite recently.[6] The mean latency of 11 years from HIV infection to acquired immunodeficiency syndrome (AIDS) kept the manifest disease hidden; most people infected as teenagers do not become ill with AIDS-defining illnesses until their 20s. During the late 1980s, Ryan White symbolized the HIV threat to young people, and his name was given to the largest US health care bill supporting HIV/AIDS services. Ryan White taught us about fear, denial, and discrimination. Since his death at age 18, many other articulate young people who are living with HIV have stepped forward as educators, to expand the vision of adults and young people and to convey what it is like to grow up in the midst of a world pandemic. Krista Blake is a teenager with AIDS who was featured on the cover of Newsweek for an article on AIDS in adolescents,[7] Krista said that the people in her tiny town in (Ohio) believed that they lived under a bubble that kept outside all the things they feared; they did not realize that the thing they most feared was already inside the bubble.

Rapid growth of the epidemic among adolescents requires only two things: unprotected sexual intercourse and the presence of the virus. Both are common in America. Unprotected sexual intercourse is reported by roughly half of all American teenagers by the age of 19 years.[8] In the past 3 years, HIV has moved well beyond coastal urban areas and has spread throughout the country.[1] Adolescent AIDS cases have increased 77% in the past two years.[6] Although adolescents account for only 1% of all reported cases, a look at prevalent and new HIV cases reveals a far greater problem. In the Job Corps,[9] the military,[10] and selected populations of adolescents,[11] the heterosexual spread of HIV accounts for a larger proportion of cases in adolescents 13 to 21 years than in adults.[12] In some instances, girls have higher rates of infection than young teenage boys (for example, among 16- to 17-year-old Job Corps applicants in the Southeast[9]). Among gay men, prevention measures seem to be faltering, perhaps because young gay adolescents have not yet faced the decimation of friends and lovers experienced by older gay men.[13]

The world pandemic of HIV has a new face: that of a young teenage woman.[14] Who, one may ask, are the Thai prostitutes? They are girls usually between the ages of 15 and 19 years. For many like these, "survival sex" is a better description than "commercial sex." Many young women in the United States and around the world engage in sexual intercourse in exchange for shelter, food, clothing, money, and sometimes drugs. Their partners are often older men, a population with higher rates of HIV than younger men.[15] Seroprevalence rates of HIV in Asia, Africa, and Latin America show a disjunction between males and females.[16] Females tend to be much younger, with the highest HIV seroprevalence among women often seen in 15- to 19-year-old girls.

Here is a six-step plan for getting real about HIV in adolescents.

1. *Replace stereotypes about teenagers with examples of real teenagers.* Last summer the world saw teenage Olympic stars demonstrating how talented minds and bodies can be trained and supported to perform miraculous physical feats. What can be done when we invest time and resources in young people is extraordinary. Contrast these Olympian images with a cover of *Psychology Today* that portrayed a teenager with HIV as a street walker.[17]

Ironically, young men and women are being blamed for the extension of the HIV epidemic, as exemplified by the headline in a New York newspaper, "Poor Teenagers Spreading AIDS."[18] In truth, it is teenagers who are being given HIV. To stereotype teenagers as irresponsible, invulnerable, and now dangerous is a method that we adults have chosen to

Editor's Note. See related articles in this issue by Piette et al. (p 510), Valdiserri et al. (p 525), Otten et al. (p 529), Herek and Capitanio (p 574), Silvestre et al. (p 578), and in the Public Health Policy Forum (p 498).

shift the blame away from ourselves. Instead, we might note that "Green Teens" lead adults towards environmental responsibility. In the HIV field, other teenagers have followed the example of Ryan White and joined the ranks of HIV educators. These are stereotypes we would do well to encourage.

2. *Replace those messages that aim to reduce risk solely by encouraging abstinence with a more balanced approach.* Teenagers know that AIDS is linked with death. Teenagers also know that sex is linked with HIV/AIDS. Not surprisingly, many now link sex with death. We should avoid raising a generation afraid of intimacy.[19] Scare tactics and "Just Say No" campaigns fail when they do not provide adolescents with the knowledge and skills that enable them to do what they are supposed to do. To raise awareness is only one step in forming and maintaining skills related to sexual negotiation.

A reasonable goal—one also promoted by Roper and colleagues in their commentary in this issue—is to delay the age of first intercourse. The proportion of adolescents having sex by the age of 19 increased during the 1970s and 1980s.[20] In 1990, a national survey of high school students showed that the trend is now reversing.[8] Similarly, illicit drug use has been decreasing among students for some years.[21] Yet, although the elimination of illicit drug use may be a goal worth discussing, to try to stamp out sex among teenagers in America or any other country is tilting at windmills, an absurdity. Some of us seem not to want teenagers to learn about their own and others' bodies and, eventually, to enjoy intimacy.

Providing teenagers with a balanced message would mean discussing not only the potential risks of intercourse but also the potential benefits of "outercourse." Outercourse encompasses sexual activities posing no risk for acquiring HIV, including kissing, petting, masturbation, or massage. Such skills would need to be learned and practiced.[22] Whether in world politics or sexual politics, negotiation is a learned skill. Simplistic adult exhortations such as "Just Say No" for solving complex adolescent situations serve only to distance already alienated youth even further from the advice, care, and services they need and deserve.

3. *Saturate the teenage world with direct, age-specific, explicit messages about risk reduction.* Three messages dominated early risk reduction strategies:[19] be monogamous, reduce the number of partners, and know your partner. These are insufficient or even inappropriate for teenagers. To many a teenager, monogamy may mean being with one person but for a week, a month, or a year. "Knowing your partner" can be irrelevant. Krista Blake knew her partner from birth in a tiny town in the Midwest. The point is that many people with HIV do not themselves know it. Many cannot or will not disclose risk or even infection to partners, friends, or family until they feel safe to do so.

Changing the response and the atmosphere to encourage HIV disclosure is the business not just of the HIV infected person, but of all of us. Other Western industrialized nations, including the United Kingdom, the Netherlands, and the Scandinavian countries, advertise condoms far more extensively than we do. Here in the United States, none of the major television networks allow condom advertisements. However, on her national television show "A Closer Look," Faith Daniel showed three examples of condom advertising. In one, a gym teacher holds up a condom and says to his class, "I found this in someone's locker . . . whose is it?" No one replies. He repeats his angry charge. Slowly, one young man stands and says, "It's mine," followed by a young woman saying, "It's mine," followed by another and another until most of the class is standing. The message is one of youth empowerment. Teenagers can have responsible sex, and peer pressure can change the atmosphere from repression and fear of sexuality to one of self-awareness and general support for healthier ways of dealing with sex and sexually transmitted diseases.[23]

4. *Link HIV prevention with HIV services.* Over 100 000 young people had HIV testing in 1991. Many more will be tested in the coming years.[24] We may hope that the new Clinton administration will fulfill campaign promises to eliminate mandatory testing policies in the military, Job Corps, and Peace Corps. Because the majority of the applicants to these federal job training programs are youth, they are disproportionately affected by the current mandatory testing policies. In the case of military applicants, if they are found to be HIV positive, they are notified about the HIV infection, not admitted to the military, and not offered any follow-up services.

Young people apply for jobs and education, not for HIV tests. A humane and productive procedure would be to routinely offer HIV testing (but not to determine eligibility) and provide medical services and preventive counseling for those found to be infected.[25] Moreover, the content of counseling and HIV testing for adolescents should be age specific. Whether HIV tests are anonymous, confidential, or routine, no adolescent should be tested unless age-specific counseling and follow-up services are readily available.[26]

5. *Recognize that adults need help in dealing with sexuality and HIV at least as much as adolescents do.* To expand AIDS education for youth requires that the adults responsible for youth (parents, teachers, and youth and health care workers) need training themselves. If we are to change the atmosphere in which adolescents learn about HIV, time and resources need to be dedicated to changing adult knowledge and perceptions.[27]

6. *Join on-site condom availability with HIV education programs in schools and youth-serving agencies.* The past 2 years have brought a cascade of HIV-education controversies around the country. Much attention was focused on New York City, the nation's leader in the frequency of HIV among adolescents and the city with the largest number of children in school. In February 1991, the New York City Board of Education voted to extend a bold program of HIV/AIDS education to the nearly 1 million students enrolled in kindergarten through grade 12. The plan has five important components: condom availability is mandated in all high schools (about 120 such schools serving 245 000 students); students do not have to participate, but parents cannot prohibit their participation; condoms are made available beyond school-based clinics through resource rooms staffed by teacher volunteers; extensive training is provided for teachers, administrators, and parents, as well as students; and the plan is to be evaluated by both internal evaluators and external researchers. The controversy has become manifest in many hours of public hearings, in three law suits questioning aspects of the plan, and in ongoing debate within the board of education as well as with outside agencies and individuals.

Across the country, other cities and communities (e.g., San Francisco, Los Angeles, Philadelphia, Falmouth, Mass, and Commerce City, Colo) are adopting versions of expanded HIV/AIDS education with condom availability.[28] Young people are now joining forces with parents, teachers, and youth and health care workers. They are demanding that, first, AIDS education go beyond the science of viruses and address a variety of means of

risk reduction (not just abstinence) and, second, condoms be made accessible in places—including schools—where teenagers spend time.

The federal government's Health Goals for the Year 2000 aim to almost double condom use by adolescents, from roughly 26% to 46%.[29] Doubling condom use would require increased access to condoms, increased discussion about the appropriate use of condoms, and, for adolescents who choose not to abstain from sex, adults' encouragement to practice "safer" sex by using a latex condom. None of these elements has been sponsored by our government. In Finland, the government health agency mailed a brochure featuring a semiclad adolescent couple engaged in "outercourse," with an accompanying text that described risk-reduction methods. The booklet, which also contained a latex condom, was mailed to *every* 16-year-old in the entire country. Can we do more? Surely. Will we do more? That depends upon whether or not we get real about HIV in adolescence. □

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The Control of Iodine Deficiency

Iodine deficiency is recognized as a global problem. An estimated population of 1 billion are at risk because they live in environments where the soil has been deprived of iodine. This lack may have been caused in the distant past by glaciation and is compounded by the leaching effects of snow water and heavy rainfall. The deficiency in the soil leads to iodine deficiency in all forms of plant life grown in the soil. Hence populations living in systems of subsistence agriculture are locked into iodine deficiency.[1]

Continued lack of iodine in the diet leads to impaired function of the thyroid gland, which enlarges to form a goiter. However, in spite of the enlargement of the gland, a lowering of the level of thyroid hormone in the blood occurs, resulting in retardation of the growth and development of the individual. This effect is particularly important for the developing brain during periods of rapid growth—during gestation, early infancy, and childhood. In the adult population, hypothyroidism may ensue, reducing physical and mental energy.[1] The general term "iodine deficiency disorders" more adequately reflects this spectrum of effects at all ages than does the designation "goiter."[1,2]

In the at-risk global population of 1 billion, the World Health Organization estimates that in excess of 200 million have goiter and 20 million have some degree of brain damage caused by the effects of iodine deficiency in pregnancy.[3] Iodine de-

Editor's Note. See related article by Fisch et al. (p 540) in this issue.