HIV Prevention in Developing Countries
Tenets of Behavioral and Biomedical Approaches

LAURA GIBNEY

INTRODUCTION

The reach of the HIV pandemic has been felt in all nations, whether they are presently experiencing a high prevalence or low prevalence of HIV. In low-prevalence nations, the priority has become the prevention of an epidemic, particularly in those nations considered to be at high risk because of sexual and injection drug use behaviors in the population and, in some cases, biomedical risks such as inadequate screening for HIV in the blood supply system. In high-prevalence nations, the priority is curtailing the spread of the disease and coping with the morbidity, mortality, and lost productivity it currently entails.

By the end of 1997, 30.6 million people were estimated to be living with HIV/AIDS, and the total number infected since the late 1970s was 42.3 million.¹ The developing world is bearing by far the greatest brunt of the pandemic, with Africa and Asia being the most afflicted. Of the 21.8 million cases in 1996, as reported by Tarantola, Lamptey, and Moodie (Chapter 2, this volume), 63% were located in sub-Saharan Africa and 23% in South and Southeast Asia. While many parallels exist between the HIV epidemics in different regions and countries, in their overview of the global pandemic of HIV/AIDS, Tarantola and co-workers describe the increasingly diverse and fragmented nature of the HIV/AIDS epidemics. The effect has been the development of a multifaceted pandemic that continues to have a devastating impact on the developing world, given the lack
of effective, accessible treatment (see the preface for a comment on the term developing world).

Recently, important biomedical advances have been made in treating HIV-infected individuals with antiviral therapies, most notably highly active combinations including protease inhibitors. Regrettably, the expense of these medications renders them inaccessible to the vast majority of people infected with HIV in the developing world. The euphoria felt by many at the 1996 International AIDS Conference, where reports on these drugs took center stage, was therefore not shared by many of their colleagues from developing countries. These therapies were not going to reduce the suffering currently caused by HIV in their countries, at least in the foreseeable future. For the developing world, biomedical and behavioral interventions to prevent transmission of the virus remain the only hope for reducing the mortality, morbidity, and social trauma associated with HIV infection.

BIOMEDICAL APPROACHES

Biomedical means of prevention currently being used include condoms, a barrier method that stops live virus from touching the genital mucosa, and the treatment of other sexually transmitted diseases (STDs) that are cofactors for HIV transmission. While often logistically complex and expensive to provide (particularly STD treatment), they are in the reach of many developing countries. Other biomedical means of prevention among adults that are currently top research priorities include the development of microbicides, physical barriers, and vaccines to prevent acquisition of the virus, and testing the utilization of preemptive treatment therapies in preventing HIV infection following exposure to the virus. Lawson, Katzenstein, and Vermund (Chapter 3, this volume) examine these existing and emerging biomedical interventions, and discuss the technological challenges they pose, the methods used to evaluate their efficacy, and issues to be considered in their application in real-life scenarios.

Other interventions with a biomedical component include HIV testing interventions implemented to prevent infection of the blood supply or to influence risk behaviors. The great increase in the protection of the world’s blood supply from HIV has been an important achievement in combating the spread of the disease, though much work remains to be done in this domain in parts of the developing world. Constantine, Abesamis, and Dayrit (Chapter 4, this volume) discuss the role of systematic HIV testing and other strategies to increase the safety of the blood supply. They discuss systems to overcome barriers to effective testing in developing countries and highlight measures that can be implemented in less than optimal testing situations.