

## EDITORIAL

### OPENING THE AIDS DOOR

HIV/AIDS remains a scourge of mankind after two decades of intensive research involving more money, people and effort than has ever before been applied in a short time frame to a single problem in medical science. The intrinsic nature of the virus, particularly its high mutability, the social milieu in which transmission occurs from person to person and its propensity to attack in prime years of life serve to underscore its ubiquity and the terror it can generate. The ethical exclusion of direct testing and listing of infected individuals debars some classical approaches of public health endeavor in its pursuit.

While efforts to develop vaccines have met with considerable snags because of the mutability and variability of the HIV virus family, and while chemotherapy has had limited success so far, socially and educationally based preventive measures have begun to witness some encouraging results. These results give reason to believe that the slowing down in the rate of expansion of the HIV positive subpopulations of some nations can lead to a major contraction of the problem. However, the long period between infection and clinical AIDS remains a biological, ethical and social challenge: a majority of HIV positives cannot be identified ahead of clinical disease to permit appropriate early clinical and societal management.

One issue of particular importance is the mother-to-child transmission of HIV with resulting infection of the new-born child. Here lies a very special challenge: since in most cases both parents of such a child will be HIV positive and since they have a high probability of dying at a relatively young age, the outlook for the child is grave in so many different respects. The child will most probably develop clinical AIDS at an early age and will have a high probability of dying young, perhaps in the first year. If the child survives several years, he/she will most likely become orphaned at a young age, is likely to have limited or no formal education, will suffer stigmata from society associated with that inflicted upon the parents. The question is: can mother-to-child transmission be interrupted with a high enough probability to warrant a public health stratagem to be implemented on a scale large enough to make a significant difference in the outlook for

this special second generation?

An important paper in this journal issue (Thaineua *et al*, 1998) focuses on this question, with encouraging results. This study took place in the northern Thailand Phayao Province against a backdrop of prior progress in handling the AIDS epidemic in that area, reflecting considerable effort in community health education leading to decreased HIV prevalence and changes in sexual behavior. This community awareness was important in respect to undertaking a systematic trial of preventive chemotherapy with the expectation of high compliance. The trial tested the efficacy and effectiveness of a short-course regimen [6 weeks of oral zidovudine 600 mg/day starting at the 34th week of gestation and 300 mg of zidovudine (ZDV) every 3 hours from onset of labor to delivery]. The main purpose of the trial was to assess the feasibility of applying this approach on a large scale, with particular attention to costs, given the current economic crisis in Thailand and in other countries in the region. Thus it is in reality a public health trial rather than a standard clinical trial *per se*; only 1 in 4 infants born to treated HIV positive mothers were HIV positive by PCR test.

The cost of medication plus testing procedures for a mother-and-child pair was \$63.20, which is considered to be publicly affordable in Thailand at this time. Operational costs over and above this were in essence covered by existing programs and so did not represent additional outlays by MOPH. However, there were also costs relating to use of breast milk substitutes employed to cut HIV transmission by this route.

The trial proved to be successful in terms of acceptance of HIV testing, prophylactic coverage and compliance to treatment. This success depends on the quality of information made available and of the counseling provided during the pretest; the commitment of the women to comply with an effective intervention that reduces the risk for their children; social/peer pressure (group pretests underscore this element). At the same time the program focuses operations on hospitals rather than health centers, leading to higher travel and opportunity costs. There is some loss of confidentiality

inherent in the approach, but it is possible that confidentiality can be improved.

The paper then addresses the all-important question of scaling up such a procedure and the extent of applying it to less sophisticated health systems in other countries. A major issue is the feasibility of screening all pregnant women for HIV status. If a high degree of success in HIV screening is attainable then the option of offering short-course prophylactic coverage to all HIV positive pregnant women is open.

Counseling is a critical element in the program: the level at which high quality counseling is achievable is important. This demands a strong interface between the health system and the community (households).

Implementation of such a program necessitates consideration of the following issues:

- availability of resources
- accessibility to services
- ensuring initial use of services
- continuity of care and compliance
- quality of services
- autonomy and self-reliance of recipients
- equity of coverage

Then there is the requirement of developing strategies to optimize effectiveness in each situation/country.

Economic assessment/projection is an essential component of such strategies, since feasibility ultimately depends on cost outlay priorities. In the Thai study the cost per infant life saved was estimated to be ~\$2,600 on the basis of an HIV transmission rate of 25%, ie ~\$35 - \$40 per Disability Adjusted Life Year (DALY) on the basis of a life expectancy of 69 years in Thailand. This compares with ~\$25 - \$30 per DALY for antenatal and delivery care in low-income countries (World Bank, 1993). The authors point out that the cost per DALY does not include the potential benefits of testing and counseling a large number of women/couples in reducing HIV transmission through change in sexual behavior.

The additional cost is about 13 cents per capita per year, which is less than 0.1% of the overall health expenditures in Thailand. Increasing coverage to 100% would raise the cost to ~ 16 cents per capita per year.

Perhaps the most important psychosocial aspect of the proposition is that this approach brings positive aspiration to HIV affected parents, against a background of despair in the face of the pandemic that threatens so many around the world. HIV/AIDS is a global public health crisis continuing in the face of what is now becoming a global economic crisis. In a number of countries, including Thailand, enormous effort in community education has begun to pay off in terms of reduced incidence rates of HIV transmission. To capitalize on this relative success story will require strong argument concerning priorities, especially in poor nations. The reference of cost analysis to DALYs gives a positive view of expenditures, since interventions of the type outlined here can contribute in a very positive way to the genesis of healthier populations and hence to productivity and to the reduction of the social burden of the society. The concept of moving from clinical trial to public health strategy is similar to that originally embodied in global EPI. While the world awaits a technical breakthrough in the vexed efforts to develop HIV vaccines, effective reduction in mother-to-child HIV transmission would be a major advance if applied globally.

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## REFERENCES

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