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SP.783 – Homework 2

Addressing Resource Constraints in HIV Diagnostic Technology

The development of an effective, easy-to-use, and highly transportable diagnostic tool for HIV/AIDS is extremely desirable in the fight against the disease. Studies have shown that an awareness of HIV status decreases the risk of infection and transmission of the disease[1]. However, once the technology for such a diagnostic tool exists there is the problem of getting that diagnosis to the people who need it. I am specifically concerned with finding the resources to make this sort of product available - both in terms of production costs (and therefore cost to the market) and the human resources necessary to deliver the product.

HIV prevalence rate in Zambia is somewhere between 15 – 20% and 73% of the population lives below the poverty line. Rural poverty in Zambia is estimated to be 83%, compared to 56% in urban areas[2]. Many of these poorer, rural Zambians have very limited access to health care, as rural areas tend to have fewer and lesser-equipped health facilities. This reality, coupled with an increasingly urbanizing population, means that educated health workers are concentrated in urban areas. The result of this trend is that there are very few people with the training needed to use a complicated health device in the poorer rural areas where increased HIV testing is most needed. As trained health workers leave rural areas in search of higher wages in the city, it leaves the rural populations even further marginalized and at risk of worse health outcomes. This necessitates a diagnostic tool that is simple to use, so that untrained health care workers can take the place of their skilled counterparts to increase access to HIV testing.

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[1] From the CDC website: http://www.cdc.gov/communication/tips/hiv_test.htm Accessed on September 27, 2005.
[2] From Care International website:
http://www.careinternational.org.uk/resource_centre/urban/urban_poverty_rising_on_agenda.htm Accessed on September 28, 2005.

The other side of this resource problem is that In Zambia, as in many other countries with high HIV prevalence rates, it is the poorest people who have the greatest need and least access to health care. How then, can we encourage the development of a rapid-use diagnostic tool when it seems to be impossible to find a price-point that both recovers the development, production, and distribution costs and would also be affordable to the millions of people who need it? This common example of market failure leaves us with the inevitable conundrum of technology's triumph over health. How does the market compensate for the economic differentials between producer and buyer? The non-answer to this question forces us to seek solutions outside of the traditional market-led product development cycle.

As long as this technology is being developed and produced in the west and sold in lesser developed markets, we must focus on changing the incentives for potential innovators. Whether that requires legislation to protect and reward the companies who work on these solutions, similar to the Orphan Drug Act in the United States, or the creation of alternative financing mechanisms, we must spark innovation to ensure that a safe and reliable diagnostic tool is available to the millions of poor people who need it. The demand is there, we simply need to determine how to create an efficient and sustainable supply. At this point, this will necessitate creative solutions to overcome the market imbalance and most likely require cooperation between academia, medical technology firms, governments, and NGOs to jointly address the needs of developing countries to improve their health outcomes. Support for HIV/AIDS programs appears to be gaining serious momentum in Zambia; this then is the time to push for even more cooperation in finding solutions to the problems of availability and access for diagnostics and treatment.

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