

Health Economics

HIGHLIGHTS OF THE YEAR

- » Two presentations at the International Health Economics Association (iHEA) Biannual Conference in Copenhagen.
- » Three presentations at the South African AIDS Conference in Durban.
- » Two presentations at the Economics Society of South Africa (ESSA) biannual conference in Johannesburg.
- » Appointment of a new junior health economist.
- » First results from a new model of HIV and ART economic impact – funded by GlaxoSmithKline.
- » Presentation of cost-effectiveness of TB diagnostics at the International Lung Conference in Cape Town.

REVIEW OF CURRENT PROJECTS

The Health Economics unit at Aurum has traditionally been a stand-alone unit with its own research agenda. In 2007, the unit was incorporated as a core unit within the company. Going forward we will increasingly focus on adding value to the range of initiatives being undertaken by the company and ensure a co-ordinated approach to tackling HIV and TB.

We will continue to work on the various projects that are under way and also continue to serve our existing clients. The change in structure will benefit existing clients by facilitating expertise from other departments in the company to the economics programmes. We will also focus on a more streamlined communications and reporting system.

The unit has built up considerable experience in the economics of untreated HIV and the economics of ART. During 2007 we also focused on the value of prevention of HIV infection. This was the subject of a presentation to the South African AIDS Conference and a separate presentation to the South African Business Coalition on HIV and AIDS (SABCOHA).

The following projects were either completed or under way during the year:

- » The estimation of the economic impact of untreated HIV;
- » The determination of the costs and benefits associated with a workplace anti-retroviral (ART) programme;
- » The cost of TB to a large employer;
- » The cost-effectiveness of new TB diagnostic techniques and culture systems;
- » The development of a strategic information system to facilitate the management of a workplace TB, HIV and STI programme; and
- » An investigation into doctor- versus nurse-based provision of ART.

The estimation of the economic impact of untreated HIV

This project has been under way for four years and has been determining the impact that HIV would have had in a number of companies in the absence of ART. All these companies have ART programmes under way. The impact of untreated HIV provides a base for understanding the costs and benefits resulting from ART programmes. The culmination of this project is the development of a new model of disease progression including the economic impact of untreated HIV and the economics of ART. (See figure 1)

During 2007, the GSK-funded model for estimating the economic impact of HIV was completed and the first results generated. The model is unique in that it is based on progression made between CD4 categories rather than WHO stage of disease. Transitions between categories are based on actual data collected from the companies whose programmes we analyse. In addition, the model allows for data collected on absenteeism, health care utilisation and employee benefits (all related to CD4 category) to be incorporated to evaluate the impact of expanding wellness or ART programmes. (See figure 2)

The determination of the costs and benefits associated with a workplace anti-retroviral (ART) programme

The ART economics programme has been running in conjunction with the HIV impact project and has evaluated the changes in absenteeism, health care utilisation, and employee benefit payments following the initiation of ART, and related these to the costs of provision. It is also possible to relate the results to the impact of untreated HIV on these same categories and understand where additional costs have been incurred and where savings have been made.



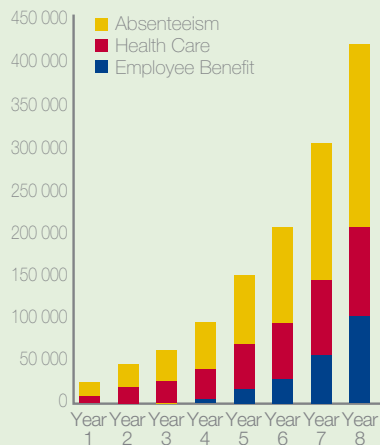


Figure 1: Example of a typical cumulative cost of HIV infection.

Reference: Van Zyl, A., Muirhead, D., Kumaranayake, L., et. al – presentation to the Economics Society of South Africa, Johannesburg 2007.

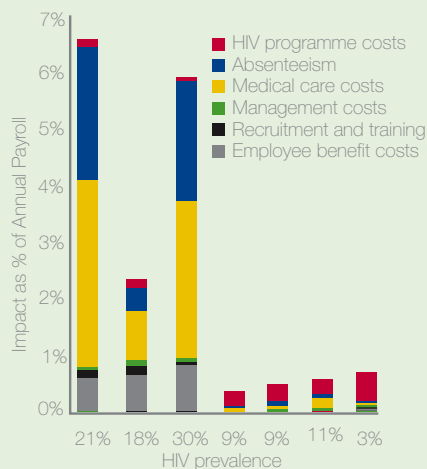


Figure 2: Distribution of economic impact of untreated HIV in seven companies with varying prevalence.

Reference: Van Zyl, A., Muirhead, D., Kumaranayake, L., et. al – presentation to the International Health Economics Association, Copenhagen 2007.

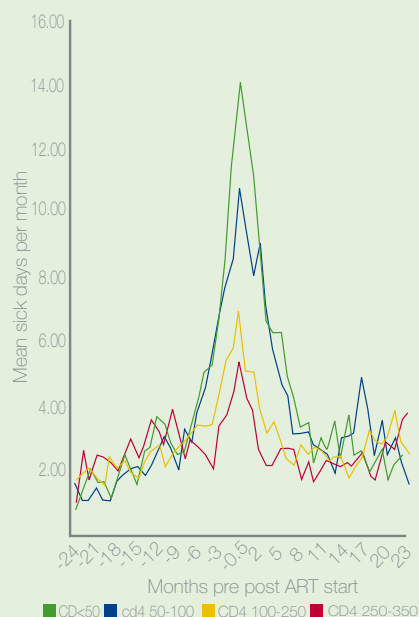


Figure 3: Changes in absenteeism pre- and post-ART initiation.

Reference: Muirhead, D., Kumaranayake, L., Rice, N. et. al – Presentation to the International Health Economics Association Conference, Copenhagen 2007.

An additional feature of this project during 2007 was the further development of an understanding of the productivity impact of ART. Extensive research into the factors affecting productivity was performed. Data was then collected on all the factors identified and a model developed that enabled us to isolate the factors affecting productivity. ART was shown to impact productivity – specific results will be published in due course. A further benefit of this exercise has been the determination of the magnitude of the impact of other factors – dust levels, labour intensity, and other illnesses, among others. (See figure 3)

Costs of provision have been comprehensively determined and include drug and laboratory costs as well as the costs of associated management, consulting, and the use of buildings and vehicles.

A further component included is the cost per virally suppressed patient. This is an important intermediate measure of cost-effectiveness. This measure has been used to highlight where the cost of provision has been reduced at the expense of the desired clinical outcome.

The cost of TB to a large employer

TB has been highlighted as an integral part of the HIV epidemic. The impact of TB on a workforce, as well as that associated with those who are HIV-positive, is being calculated. This is being carried out as a cost of illness analysis and includes determining the cost of treatment, absenteeism impact, and the impact on general health care utilisation.

This research also provides a foundation for Aurum to inform the approach to the strategic management of TB within the company. Aurum is conducting other research into prevention, diagnosis and treatment of TB with benefits, both economic and clinical, that can then be quantified for this workforce.

The cost-effectiveness of new TB diagnostic techniques

New diagnostic techniques are being developed, partly in response to the increase in smear negative TB associated with the HIV epidemic, but mainly recognising the need for expedited routes to conclusive diagnosis in TB suspects. It is important to quantify the costs and

benefits of these new techniques, particularly in resource limited settings. We have carried out a full costing of one new technique and compared this with an existing protocol.

The study has resulted in a number of preliminary clinical conclusions and these have been related to the costs of achieving these outcomes. We hope to take this further in 2008 and better understand the implications in the context of the HIV epidemic and the full TB treatment cycle.

The development of a strategic information system to facilitate the management of a workplace TB, HIV and STI programme

This programme has looked at developing a strategic information system for a large, employer-provided health care programme. The system is designed to focus the attention of health care providers on the interaction between the three epidemics and ensure that each is used as an access point for the others.

The system also highlights gender specific interventions and a number of risk factors. It is also designed to improve communication between the various locations and levels of management. Information is also being contextualised to facilitate comparisons between sites and benchmarking to other service providers.

This project will also assist us to provide the client with further insight into the progression of HIV, TB and STIs and enable us to recommend interventions and determine their effectiveness. The structure of the reports also highlights the role that inputs play in achieving outputs – facilitating planning and identifying critical factors for future programme activities and monitoring.

An investigation into doctor- versus nurse-based provision of ART

This is part of a wider investigation into the provision of ART through doctors or nurses. We are capturing data on household costs and quality and well-being to understand the outcomes achieved through these two models of provision. The project is ongoing with data collection continuing in 2008. This project has particular relevance in resource limited settings where scaling up of the

provision of ART can only be rationally done through nurses.

PLANS AND CHALLENGES

2008 promises to be a year of consolidation and also new beginnings. Prof. Chester Morris has joined Aurum and will be responsible for the overall management of the health economics programme. We are also excited to continue previous collaborations and begin new strategic partnerships with both South African and other partners. We realise that the effort to assist stakeholders at all levels requires co-operation rather than competition between all parties.

The Health Economics unit is also continually looking to find innovative solutions to priority areas such as prevention of HIV, adherence to ART, and the relationship between TB, HIV and STIs. To this end we have pursued collaborations with a diverse range of academics, the public sector and industry partners.

One key project that we are looking to establish over the next year is a collaboration with the University of California Berkeley and the Women's Global Health Imperative at Research Triangle International. This is a novel incentive programme that we hope to develop into a viable trial. The programme is intended to reduce stigma, reduce incidence of HIV, and increase adherence to ART. We are currently approaching potential funders to aid in covering the cost of the first phase.

The last focal area will be on the development of capacity in both public and private sector partners around health economics issues.

It is our philosophy that we will need to continue to carry out current interventions and studies more effectively and, importantly, ask new questions that will lead to new solutions. We will continue to strive to provide our stakeholders, private and public, with the best information available and assist them in developing strategies to not only mitigate the impact of the HIV and TB epidemics, but begin to win the battle.

Andrew van Zyl
Programme Leader

