

health economics and systems

highlights

- Substantial progress in quantifying economic benefits of providing ART to HIV-infected employees in the participating companies. Preliminary results suggest that provision of ART results in a marked decrease in the healthcare costs per employee in the longer term and a reduction in absenteeism.
- Steady progress has been made in quantifying the economic impact of HIV.
- Investigations continue into the cost-benefits and user preferences of four different methods of administering ART.



OVERVIEW

The work conducted by the Health Economics and Systems Research Programme is complementary to much of the biomedical research conducted by the Aurum Institute.

The aim of this research programme is to continuously review and evaluate health systems and programmes in both the public and private sector so as to ensure that the highest quality health care is provided in a cost-effective and equitable way. To this end, economic theory is used to better understand the health issues and the methods, processes and systems utilised in improving public health. More specifically we:

- evaluate health care interventions and new technology for both the public and private sectors
- conduct major disease impact assessments on both public and private businesses, households and communities in general
- analyse both public and private health care systems and policies in the context of overall health systems development
- ensure that research results feed into decision-making and policy through effective engagement with all stakeholders.

REVIEW OF PROGRESS – 2005

In 2005, the programme had five projects of which two were completed during that year.

Economic analysis of antiretroviral therapy implementation for HIV-infected employees in a large workplace programme.

The principal aim of this project, which is funded by participating companies, is to quantify the direct and indirect costs and benefits associated with the implementation of employer-sponsored antiretroviral therapy (ART) for HIV positive employees of the participating companies from an employer-provider perspective. More specifically it seeks to do the following:

- To calculate the financial and economic health service and total cost of ART provision in each company.
- To analyse the determinants of and variations in the costs of ART programmes among the different sites, exploring factors such as the extent of current HIV/AIDS-related health services, maturity and size of ART programmes, the stage of illness, level of adherence, and other patient and site-related characteristics.

- ✧ To estimate the net direct costs of ART to health services by considering additional costs associated with side-effects and hospitalisation and a decrease in costs due to a reduction in opportunistic illnesses for companies providing their own health services.
- ✧ To analyse the determinants of, and variation in the net costs of ART provision between individuals after 6 months, 12 months and 24 months on treatment, exploring factors such as the site of treatment, baseline CD4 count upon starting ART, age, gender, type of job and other patient-related characteristics.
- ✧ To measure the likely changes in indirect cost to company in terms of absenteeism associated with the implementation of ART.
- ✧ To measure the overall direct net cost (savings) associated with the implementation of ART in sites including a reduction in employee turnover and other associated employee costs.
- ✧ To explore the existence of changes in indirect costs to company in terms of productivity at work associated with the implementation of ART.
- ✧ To quantify productivity changes associated with ART in units of productive time gain/losses and value these changes in monetary terms.
- ✧ To measure the cost-effectiveness of ART implementation based on intermediate and final outcome indicators.
- ✧ To develop a generic cost-benefit model of employer-based ART introduction as part of a holistic package of services for HIV positive employees.

To date, the costs of providing ART have been calculated for some sites for periods of up to 30 months. The short-term analysis shows that costs per patient per month on ART are declining across all participating companies (Figure 1).

Another benefit is a reduction in the rate of absenteeism across companies. Figure 2 illustrates the trends in absenteeism for 6, 12 and 18 months on treatment.

Assessment of the current and future economic impact of HIV/AIDS on the various participating companies.

This is a 3.5 year project (2004 to 2007) funded by GlaxoSmithKline. This project aims to provide companies with ongoing estimates of the potential economic impact that HIV/AIDS poses to their companies. A consistent approach is taken across companies in order to facilitate a programme-wide picture while taking into account the specificities of each company. The approach will further build in the necessary flexibility to incorporate health, including the provision of ART, and non-health interventions employed at various levels of the company that may influence HIV's economic impact.

The project has the following specific objectives to:

- ✧ Estimate the future HIV prevalence rate expected in the companies including numbers of employees within job categories who are, and who are likely to become HIV positive and develop AIDS, and a range of outcomes associated with lifetime HIV illness of employees, including WHO staging and numbers of incapacitations and deaths related to HIV, over a 10-year period through the use of an existing workplace demographic impact model.
- ✧ Estimate the frequency and average duration of HIV related friction periods occurring in each of the companies due to HIV related separations from the workforce and ongoing absenteeism, and the costs associated with these periods.
- ✧ Estimate the costs of additional health service use associated with HIV/AIDS in companies supplying in-house health services in the short, medium and long term.
- ✧ Assess the effects of any reduced productivity at work due to HIV, taking into account other potential causes of labour output variation.
- ✧ Estimate the total direct and indirect costs to company associated with HIV (human resource, production and costs of production, health care and HIV programme implementation, and management).

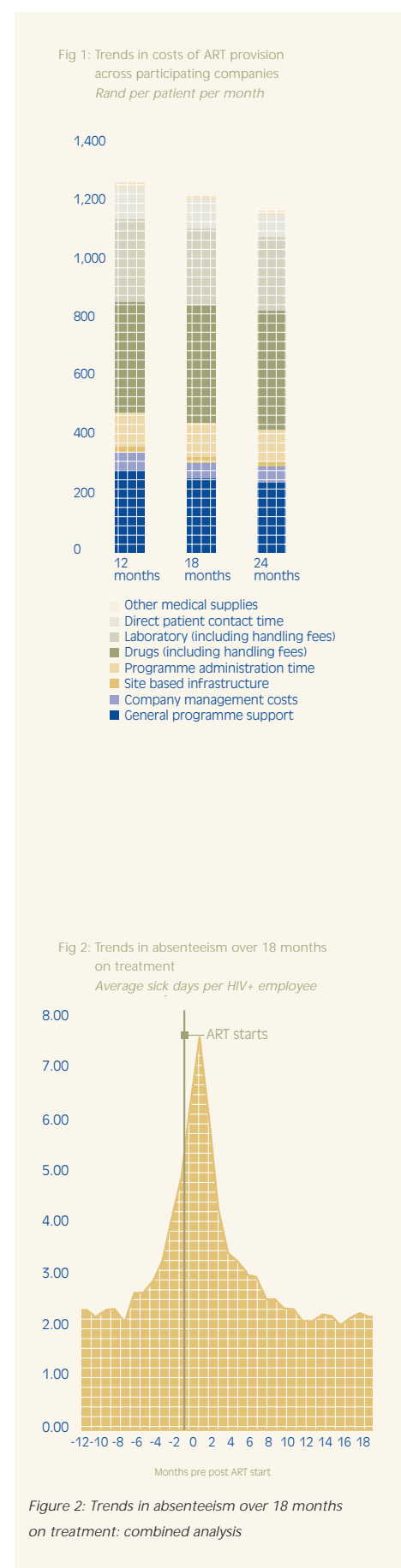


Fig 3: HIV/AIDS prevalence across companies (%) – 2004

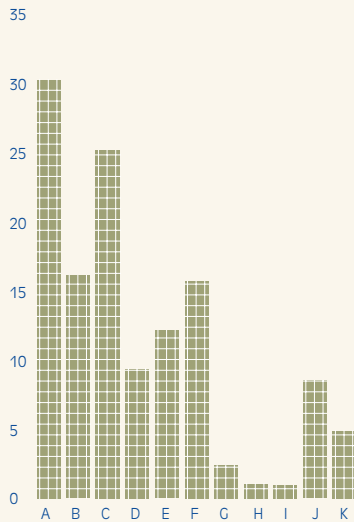
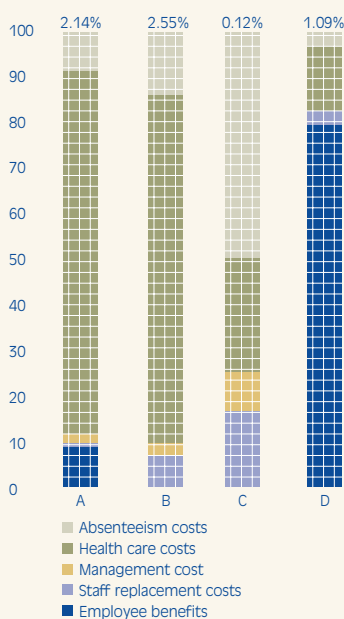


Fig 4: HIV costs as % payroll by category – 2004



- 1 identify interventions or strategies implemented that may mitigate the economic impact of HIV on the company.
- 2 Explore the relative contribution of a number of health and non-health interventions identified above to mitigate the impact of HIV, and the relative cost of implementation.
- 3 Develop a multi-component model containing improved estimates of HIV prevalence, progression and economic cost, tailored to company-specific settings.
- 4 Produce refined estimates of economic impact of HIV/AIDS on the company as a percentage of payroll and annual turnover using the model developed.
- 5 Produce a user's guide to the model and conduct training in its use, including the modification of assumptions, updating of data and interpretation of results for use by officials of participating companies.

The study began with ten companies and more than 50% of them have had their demographic and economic impact analysis results for the first year. Figure 3 illustrates the general HIV prevalence profile for seven of the companies.

Figure 4 shows the HIV/AIDS costs as a percentage of company payroll. The weighted average cost as a percentage of payroll is 2%, which is comparable to what has been established elsewhere in the region. For companies with in-house health care services, health care costs form a major part. The cost distribution is a function of company HIV prevalence and when it peaks, human resource policies, and the levels and structures of benefit payments.

Safeguarding Soweto and Masiphumelele households – doctor- versus nurse-based provision of ART – CIPRA project.

This is an ongoing project which is part of an NIH-funded randomised control trial, the aim of which is to assess the costs, cost-effectiveness and user preferences between nurse-based and doctor-based delivery of ART in two urban townships in South Africa.

The specific objectives are to:

- 1 Calculate the economic total and incremental costs, from the perspective of both the provider and society, of four different approaches to the provision of ART provision in primary care services for each study site (nurse and DOTS; nurse and non-DOTS; doctor and DOTS, doctor and non-DOTS).
- 2 Estimate potential costs to the government of provincial and national-based programme scale up in the short, long and medium term, and the resulting net costs/savings of each approach as a national strategy, including estimates of the human and physical infrastructure required, costs of required changes in health systems, the delayed or avoided burden to the health services of life-time HIV/AIDS, and avoided or delayed orphan care to be required.
- 3 Estimate the relative cost-effectiveness of the introduction of the four alternative models of ART provision versus no provision, using life years gained and quality adjusted life years gained.
- 4 Quantify users' preferences for various aspects of ART provision programme design, assess their relationship with adherence patterns and thereby estimate the cost differentials of programme design to ensure greater adherence to and compliance with ART.

COMPLETED PROJECTS

Assessing cost effectiveness and women's preferences regarding the provision of ART prophylaxis post-sexual (PEP) assault in South Africa. This was a collaborative research project involving the Medical Research Council and University of Witwatersrand. The aim of the study was to investigate the costs and cost-effectiveness of scaling up access to post-sexual assault ARV prophylaxis in government health services in South Africa and to look at

women's preferences regarding the design of post-sexual assault health services and how this influences the costs and cost-effectiveness of potential national scale-up programmes.

More specifically the project sought to:

- Investigate women's preferences for sexual assault services and understand the trade-offs they would be prepared to make between different aspects of service delivery
- Establish the costs of different models of care
- Determine the cost-effectiveness of post-exposure prophylaxis for sexual assault

The project design was a matched participant conjoint and cost effectiveness analysis study conducted from a national-provider perspective following desk-based model development. The study showed that an understanding of rape by providers who have special training in counselling was important ($P < 0.001$). PEP being available without an HIV test was not significantly different from PEP not being available at all, however, PEP provided after a negative HIV test was preferred by women ($P < 0.001$). Travel time was not important. The conclusion was that current government policy to provide PEP only if an HIV test is negative is supported by women. In order to make services more acceptable to potential users, the selection of sensitive providers and adequate training is required.

A qualitative analysis of the impact of introducing designated service providers (DSP) and the chronic disease list (CDL) to the medical schemes environment. The aim of the project was to assess the impact of introducing DSP and CDL to beneficiaries of medical schemes, medical schemes and providers, in terms of access to health care, solvency and viability in general. More specifically the study sought to:

- assess the knowledge base of both providers and beneficiaries on the new regulatory changes
- explore perceived impact in terms of equity, access and financial burden on beneficiaries and providers
- determine the factors (design and process issues) that might have influenced the impact (both intended and unintended) of the regulatory policy change.

The key finding was that there is little knowledge among consumers of the regulatory policy change and its purpose. Consequently, consumers do not know their rights and what to do to ensure that they benefit from the policy change. This is attributable to a number of factors including limited communication of the policy change to consumers by medical schemes. Access to services was undermined in instances where designated providers were strategically located.

CHALLENGES

There are several challenges facing the health economics team, foremost of which is the need to position the division in the minds of healthcare thinkers as the leading proponent of a fresh approach to the healthcare delivery and evaluation debate taking place in South Africa today. Doing so will strengthen the funding platform the team needs to address the very topical and relevant issues facing the country and continent.

FUTURE PLANS AND OPPORTUNITIES

- Diversify client base within and outside the corporate sector through sustained (formal and informal) engagement of both public and private stakeholders.
- Increase Health Economics capacity both internally and externally: internally, through mentorship programmes, workshops and short-courses and externally through a structured education programme involving local and external institutions.
- Resource mobilisation for sustaining current capacity and growth through preparation of research and capacity development proposals.
- Enhance our competitiveness through high-quality publications and presentation of our work at high-profile national and international conferences.

