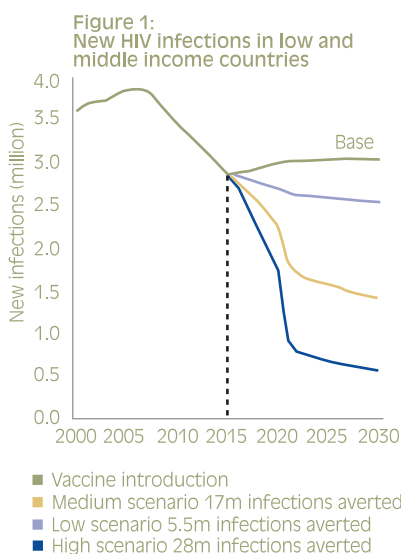


PROGRAMME REVIEW

HIV/AIDS Prevention

Highlights of the year

- The Aurum HIV Vaccine Research and Treatment Centre, rated one of the best in the world by the NIH Division of AIDS, vaccinated its first participant in the HVTN 204 HIV vaccine trial, a phase II trial to assess the safety and immune response to two candidate HIV vaccines from the HIV Vaccines Trials Network.
- The target number of volunteer participants for HVTN 204 was enrolled by November 2006 and will be monitored over the next two years.
- The Vaccine Research Centre awarded a grant to conduct an acute infection study by Family Health International and the Center for HIV/AIDS Vaccine Immunology. Preparations have been completed and the study is expected to start during the first quarter of 2007.
- Preparations completed for the Vaccine Research Centre at Klerksdorp to participate in the HVTN 503 Phase IIB study, the first vaccine efficacy trial in South Africa, which aims to determine whether the candidate vaccine prevents HIV transmission and/or lowers the HIV viral load in infected patients.
- The community outreach programme extended its communications and contact with the North West provincial health department and local AIDS committees.
- Agreement was concluded with SAAVI on funding support for the coming three years.
- Aurum was awarded a grant by the International AIDS Vaccine Initiative (IAVI) to establish a new site in Rustenburg during the first half of 2007.
- Aurum selected as a site to conduct the VIRAX therapeutic HIV vaccine trial.



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Overview of HIV Vaccine programmes

A quarter of a century into the global pandemic that is HIV, more than 25 million people have died from AIDS, 39 million people are living with HIV worldwide and 4 million are newly infected each year. Even as South Africa expands its own programme to prevent and treat HIV/AIDS, 1,500 new infections every day testify to the ever-growing humanitarian, social and economic burden the country faces. While the global community works to offer treatment and care services to those already infected or affected by AIDS, there is an urgent need to strengthen HIV prevention activities in order to stem the tide of new infections.

Bringing the HIV pandemic under control requires the continued use of existing methods of HIV prevention which have proven effective, such as education/awareness drives and the correct use of condoms, as well as the introduction of additional methods of prevention once they have proved to be effective, such as male circumcision and microbicides.

Vaccines are generally regarded as among the most effective options for fighting infectious diseases. By extension then, an effective AIDS vaccine is thus the best hope of halting the spread of HIV.

Currently, no effective vaccine to prevent HIV infection is available. There are, however, a growing number of promising candidate vaccines entering human trials, and in recent years the focus has shifted from Phase 1 safety and immunogenicity trials to early efficacy trials, which require larger numbers of participants. Nonetheless, the time frame for finding an effective vaccine is long and requires substantial effort and financial support – an effective vaccine is not expected to be registerable before 2015 but this does not imply that the work will be in vain.

Scientists have modelled the future development of the AIDS epidemic and the likely impact a vaccine would have. These models show that including vaccines in a comprehensive response to the pandemic can have a significant impact on ending the AIDS pandemic in coming decades. Additionally, in order to yield significant benefits, a vaccine would not have to be 100% effective or reach 100% of an at-risk population. A vaccine that is 50% effective, given to just 30% of the



population could reduce the number of new HIV infections in the developing world by more than half over 15 years. A vaccine that is more effective or reaches a greater number of people would have an even larger impact.

Figure 1 illustrates the modelled impact of an effective vaccine under three scenarios. This analysis suggests that even if current prevention and treatment services are expanded over the coming decade, in line with ambitious international goals, a vaccine would still have a tremendous beneficial impact in blunting the AIDS epidemic. Thus, a comprehensive response to the AIDS epidemic should include investing in research for a vaccine to complement expanded prevention and treatment programmes.

Review of progress – 2006

Aurum brought much preparatory work to fruition with the start of its first phase II HIV vaccine trial during the year. Following years of community mobilisation activities and facility preparation, a large gathering of scientists, healthcare workers, key funder representatives and members of the community joined hearts in lighting a candle to remember those lost to AIDS. The candle also shone to signify that a new light had dawned in the fight against AIDS. Over the remainder of the year, the full quota of 80 participants for the trial came forward to bravely volunteer for the study. Enrolment was completed in record time, which was a great achievement given the challenges imposed by a shortage of laboratory staff. This study tested two vaccines, one given as a primer and the other as a booster. The two vaccines are given sequentially to study whether they have a complementary effect and cause a better immune response than either vaccine used alone. Participants will be monitored for 12 months. The rest of the Centre's efforts for 2006 were concentrated on preparation for three additional studies, the details of which are set out below.

As the Aurum HIV Vaccine Research and Treatment Centre is affiliated to several vaccine trial networks, including the HIV Vaccine Trials Network (HVTN), the International AIDS Vaccine Initiative (IAVI) and the South African AIDS Vaccine Initiative (SAAVI), we enjoy significant collaboration with South African and international scientists involved in HIV vaccine research from a range of disciplines. These agencies also fund the research Centre and provide invaluable assistance in training Aurum staff and monitoring standards of practice.

Community education and outreach programme

Established in 2003 to prepare the community of the Matlosana district for the advent of HIV vaccine trials, the community education and outreach programme remained very active in this district and is the foundation of participant recruitment, education and retention. It is also responsible for community education, stakeholder liaison, identifying and preparing potential participants for enrolment, and promoting the retention of participants.

Potential participants are educated about HIV vaccine trials in vaccine discussion groups. A community advisory group (CAG), the cornerstone of the programme, has been established to assist with community liaison and mediation. This group, which has been pivotal in the run-up to the start of HVTN 204, has sub-committees that are responsible for ethics, protocol review and the development of educational material. They also review all studies and approve letters of support sent on behalf of the community to ethics and regulatory bodies. The CAG, which comprises lay people and professional medical personnel with an interest in ethics, also has the opportunity to interact with other CAGs, both nationally and internationally. It is particularly pleasing to see all their hard work coming to harvest with the start of vaccine trials in the Matlosana district.



First vaccine arrives



First HIV vaccine volunteer



Community Advisory Group members at the launch of HVTN 204

Center for HIV/AIDS Vaccine Immunology

Aurum was granted funding from July 2006, with additional funding to be awarded in later years, for the Acute HIV-1 Infection Prospective Cohort Study. This study, which aims to identify people with acute HIV infection who are sexually active and at high risk, will investigate immune responses to acute and chronic HIV infection with a view to informing the development of new candidate HIV vaccines.

Preparations were completed in the first half of 2006 and the study should begin in the first quarter of 2007. In all, 1,440 volunteers will be screened to find four acute infections and to this end Aurum is collaborating with local clinics and primary health care centres.

Most of the participants in this study are likely to have sexually transmitted infections (STIs) and Aurum has registered a research pharmacy on the site to treat volunteers and the Department of Health will provide the STI drugs to be dispensed to the participants at no cost.

HVTN 503 vaccine efficacy trial

Aurum will participate in the first HIV vaccine early efficacy trial (HVTN503) to be conducted in South Africa during 2007. Preparation at the Centre for this trial has consumed much of the effort of staff and research scientists on the Prevention Programme. The study will recruit 600 participants at site to test the efficacy of this vaccine at a population level in preventing or reducing the impact of HIV/AIDS. This forthcoming study has necessitated an expansion of facilities, the recruitment of additional staff and the equipping of laboratories and consulting rooms.

VIRAX

To date, HIV vaccine trials have focused on preventive vaccines. In recent years there has been increasing interest in developing

therapeutic vaccines, that is vaccines which can be given to those who are already infected with HIV in order to limit the progression of the disease. Therapeutic vaccines could potentially prolong survival following HIV infection, reduce the need for ART, and limit the transmission of HIV infection to others.

Aurum's HIV Vaccine Research and Treatment Centre has been selected to participate in the first VIRAX therapeutic vaccine phase II trial in 2007.

Future plans and opportunities

IAVI has awarded Aurum a grant to expand its HIV vaccine programme to Rustenburg, another district of North West Province. Vaccine trials will begin here in 2007, once the facility has been completed.

The community education outreach programme will continue to target specific groups for participation in the various studies. An additional aim of the programme will be to promote the relationship with the local health department so as to facilitate communication with local clinic managers. There are also plans to start an adolescent CAG. Funding for this initiative will be sourced from SAAVI and HVTN.

We aim to intensify stakeholder relationships, including those with local and provincial governments, local AIDS councils and all the NGOs and CBOs in the area. It is crucial that channels of communication be kept open in a field of research as intense and complex as that of HIV.

We wish to recruit a socio-behavioural scientist to assist with understanding and characterising our study population and the community.

An additional objective is to collaborate with the HIV Vaccine Ethics Group (HAVEG) and the University of Stellenbosch SAAVI Socio-behavioural group to promote knowledge and skills in understanding

ethical research in the North West Province and among Aurum staff.

The programme has placed a high priority on publication of papers in the coming 12 months. Much good work has been done, both in terms of actual research and in establishing programmes and systems, and this must be shared in the public domain in the quest to end the HIV pandemic.

Challenges

Given the general scarcity of professionals in the field, the programme has had some problems with staff retention and accreditation of the laboratory at the Centre. These problems have been compounded by the relative complexity of the specific tests required for HIV vaccine studies and have led to delays in implementing some studies. However, progress is being made in rectifying the shortage of skills and accreditation of the laboratory.

With the programme growing and given the number of large-scale studies, there is as yet no formal data management capacity, either on or off site. A data manager is required to assist in developing data management strategies and data bases for parallel research programmes.

A social scientist has yet to be appointed despite several recruitment drives. The scientist will support the socio-behavioural part of the study and oversee most of the community outreach activities, especially as there is still a general reluctance in the community to undergo voluntary counselling and testing (VCT).

2006 has been a year of great beginnings for the HIV Vaccine Research and Treatment Centre in Klerksdorp. We owe thanks to all our staff and the community for their loyal perseverance in making this "Hope of the Community" Clinic a reality.