

BOTSWANA - BAYLOR

Children's Clinical Centre of Excellence

annual report 2009-2010

BIPAI Baylor International
Pediatric AIDS Initiative
at Texas Children's Hospital



BCM
Baylor College of Medicine



Botswana - Baylor
Children's Clinical
Centre of Excellence

CONTENTS

FOREWORD	4
1 OUR HISTORY	
1.1 The Botswana- Baylor Children's Clinical Centre of Excellence.....	5
1.2 Baylor International Pediatric AIDS Initiative	5
2 DELIVERING OUR STRATEGIC OBJECTIVES	
2.1 BIPAI Mission Statement	7
2.2 Botswana-Baylor Children's Clinical Centre of Excellence Mission and Objectives	7
2.3 Implementing Strategy	7
3 PATIENT CARE	
3.1 Screening Clinic	8
3.2 Paediatric Infectious Disease Clinic.....	9
3.3 Adolescent Programme	11
3.4 Psychosocial Interventions	12
3.5 Family Model Clinic	20
3.6 Nutrition & Diet	21
3.7 Community Outreach	21
3.8 Improving the Care and Diagnostic Strategies of Tuberculosis for Children in Botswana	22
4 RESEARCH	
4.1 Introduction	23
4.2 BANA-02 Trial	23
4.3 The “Voice”: A Cross-Sectional Psychosocial Survey	23
4.4 B.I. 1100.1518 Nevirapine Extended Release (XR) Trial	24
5 EDUCATION	
5.1 Introduction	24
5.2 Paediatric KITSO HIV/AIDS Training Course	24
5.3 School Staff Training	25
5.4 Sharing Knowledge	26
5.5 The COE Visiting Scholars Programme	30
6 ADMINISTRATION	
6.1 The Board	31
6.2 The Management Committee	32
6.3 Community Advisory Board	33
6.4 Visitors to the COE	33
6.5 COE Workforce	34
6.6 Capacity Building	35
6.7 Monitoring and Evaluation	35
6.8 Partnerships	35
6.9 Information and Systems Maintenance	35
6.10 Finance	38

Foreword

Regular readers of our Annual Report will notice a difference in the 2010 Report: It includes a statement of our audited accounts for the Financial Year 2009/2010. In the past, our financial statements have been published separately. This consolidated report reflects an important policy that aims to provide our partners, supporters and clientele with a complete and transparent account of the activities and financials of the COE in one easy-to-read document.

This past year has been especially challenging because the pertaining economic downturn negatively affected our funders' ability to support us. We worked to exploit synergies and maximize on efficiencies and we succeeded in doing more with less. And so we stride into our eighth year of operations with confidence and look back with pride and satisfaction. In line with our vision, we have continued to achieve excellence in all key areas of our endeavour: provision of comprehensive care and treatment, capacity building and clinical research. The majority of our patients are thriving and the annual mortality remains at <1%; our capacity building - through health professional training, staff development, mentorship and outreach activities - has significantly increased; and, we have commenced a new clinical trial and a national survey on the perspectives, feelings, experiences and perceived needs of HIV-infected and affected children. Indeed, two of our innovative projects, "In-reach" and "Teen Club" have been selected for inclusion in the AIDSTAR Promising Practices Database (and can be viewed on-line at: http://www.aidstar-one.com/promising_practices_database/search). Not least, in September 2009 the COE received the Vision 2016 Award for making "a significant contribution towards building a compassionate, just and caring Nation."



The aforementioned successes would not have been possible without the dedication and hard work of all our staff, as well as the support of our partners and funders. We sincerely appreciate the excellent support, partnership and collaboration we have enjoyed with the Government of Botswana and especially the Ministry of Health, the Ministry of Education and Skills Development, and Princess Marina Hospital. Our major funders this past year have been the government of Botswana, CDC-BOTUSA, Texas Children's Hospital, Baylor College of Medicine, NACA, World Bank, UNICEF, Barclays Bank, BIPAI, World University Service of Canada and the American Academy of Pediatrics. We cannot thank you enough for the support. Our most valued resource is our staff - regular, Pediatric AIDS Corps doctors and volunteers. Their energy, selflessness, resourcefulness and willingness to put in that extra effort are incredible. Thank you all, so much.

As noted in the reports for the last couple of years, the need to care for the increasing population of adolescents who are living with or are affected by HIV/AIDS remains one of the key challenges of our time. To this end, we have recently acquired a piece of land directly opposite our COE on which we plan to construct an Adolescent Centre - funds permitting. I am confident, as always, that together with our partners we can and must overcome these challenges.

A small, square image containing a handwritten signature in black ink. The signature appears to be 'G. Anabwani'.

Gabriel M. Anabwani
Executive Director



SECTION I-OUR HISTORY

1.1 The Botswana-Baylor Children's Clinical Centre of Excellence (COE)

The Botswana-Baylor Children's Clinical Centre of Excellence (COE) was opened and officially dedicated by the former president of the Republic of Botswana, His Excellency Mr. Festus Mogae, on June 20, 2003. The COE is a public-private partnership between Baylor College of Medicine International Paediatric AIDS Initiative (BIPAI) in Houston, Texas, USA (a program operating out of the Baylor College of Medicine at Texas Children's Hospital) and the Government of Botswana. Baylor College of Medicine is internationally renowned for excellence in education, research and patient care.

The COE provides services that aim to enhance the health of children and their families through a comprehensive approach to treatment and care. Education for health professionals, clinical research and community outreach are also integral to the COE's mission.

The COE facility was made possible by a landmark \$6 million grant from the Bristol-Myers Squibb Foundation's Secure the Future program. The COE's operations are supported by additional funding from the Government of Botswana and many other vital partners.

In the spirit of collaborative partnerships, the COE is staffed by health professionals from Botswana and abroad and ensures that the staff is provided with ongoing training that equips them with the skills required to deliver standards of care equivalent to the best in the world.

The COE supports the Botswana Government's approach to care, which aims to decentralize care to communities by promoting community partnerships and outreach services. Outreach is hence a critical component of the COE's mandate. In partnership with the Bristol-Myers Squibb Foundation, BIPAI established a Pediatric AIDS Corps, whose doctors are specialists seconded to BIPAI Centres of Excellence in 8 African countries, including the Botswana COE. The Pediatric AIDS Corps has dramatically increased human capacity and made it possible to plan and expand services to include in-reach home visits for all COE patients, physician outreach and mentorship to other hospitals and a school teachers education programme.

Since the COE's inception, more than 10,000 children have been tested and counselled for HIV, thousands have been started on antiretroviral therapy (ART) and more than 2,000 health professionals have been trained countrywide. Thus, the COE has become a significant part of Botswana's fight against the HIV pandemic and a model for several other BIPAI centres that have followed in Lesotho, Swaziland, Uganda, Malawi and Tanzania.

1.2 Baylor College of Medicine International Pediatric AIDS Initiative (BIPAI)

The Baylor College of Medicine International Paediatric AIDS Initiative (BIPAI) was established in 1996 with the aim of fostering international HIV/AIDS prevention, care and treatment, education of health professionals, and clinical research. Since 1996, BIPAI has rapidly grown to become the largest university-based program worldwide dedicated to improving the health and lives of HIV-positive children and their families. The first BIPAI centre opened in Constanta, Romania in 2001. The Botswana-Baylor COE was the second centre in the network to open two years later, and the first on the African continent. Its success led BIPAI to replicate it in a number of other locations across Africa, creating a network of dedicated centres. BIPAI now has an operational presence in Uganda, Lesotho, Swaziland, Malawi, Kenya, Tanzania, Mozambique, Ethiopia, Angola and Libya. In the countries where BIPAI has Centres of Excellence, partnership agreements are entered into with the host Governments' Ministries of Health and other relevant governmental bodies to scale up paediatric HIV/AIDS care and treatment.

BIPAI centres have become a critical part of countries' approach to demystifying the care and treatment of children infected and affected by HIV/AIDS, and communicating a positive message of hope to communities hardest hit by the epidemic. BIPAI also recognises the need to expand services to communities in rural areas and has worked to improve the standards of treatment and care and clinical infrastructure in underserved areas in countries where it has established Centres of Excellence. A new element added to the BIPAI mandate in some countries is to establish satellite clinics to provide life-saving HIV/AIDS care and treatment to children and families residing outside the main urban areas, hence extending the reach of the Centres of Excellence. All satellite sites are integrated into the existing system of care in the countries, with health professionals from BIPAI working alongside local colleagues.

Development of local capacity is one of the aims of BIPAI. BIPAI's capacity to train African healthcare professionals has steadily increased since the deployment of Pediatric AIDS Corps doctors began in 2006. The Initiative is demonstrating, through the combination of excellent doctors, infrastructure, valuable partnerships with Governments and local training, that comprehensive care for children and their families is possible even in the most underserved communities in Africa. BIPAI also carries out research activities aimed at improving care and treatment options for children living with HIV/AIDS. It is hoped that the results from research will, in positive ways, inform governments on future treatment regimens in children.

The Network has become an important tool for sharing experiences in caring for and treating children with HIV/AIDS, and for learning from those in different countries. Through the Network, we are also able to share and leverage resources to access even more children in need of care. It is BIPAI's mission to help governments fight the HIV pandemic and transform the care being offered to children and their families on the African continent.


Mark Kline, the president of BIPAI, has in many fora indicated the top 10 values of the BIPAI network that make it unique:

1.	We allow nothing to distract us from our commitment to children and families.
2.	We are true to our word.
3.	We see opportunity in every challenge.
4.	We refuse to duplicate or squander resource.
5.	We never give up.
6.	We respect and prize our partners.
7.	We are hopeful and optimistic.
8.	We focus on solutions, not problems.
9.	We value teamwork.
10.	We celebrate diversity.

1.3 BIPAI Partners

BIPAI works in close partnership with the following organizations:

- Governments of host countries
- Elizabeth Glaser Pediatric AIDS Foundation
- U.S. Centers for Disease Control and Prevention
- Fogarty International Centre/National Institutes of Health
- U.S. Department of State
- Bristol-Myers Squibb Foundation
- Abbott Fund
- UNICEF



SECTION 2-DELIVERING OUR STRATEGIC OBJECTIVES

2.1 BIPAI Mission Statement

The Botswana-Baylor Children's Clinical Centre of Excellence mission has been derived from the BIPAI mission statement:

“To conduct a program of high-quality, high-impact, highly ethical paediatric and family HIV/AIDS care and treatment, health professional training, and clinical research.”

2.2 Botswana-Baylor Children's Clinical Centre of Excellence Vision and Objectives

The vision of the COE is:

“To pursue excellence in the provision of comprehensive care and treatment, in clinical research and health professional training and to become nothing less than the finest paediatric HIV/AIDS centre in the world.”

The key objectives integral to the mission include the following:

- To provide comprehensive state-of-the-art HIV/AIDS care and treatment services to the children of Botswana and their families using the COE as a springboard to the whole country;
- To carry out clinical research designed to answer questions of local and worldwide importance regarding the prevention, diagnosis, and treatment of paediatric HIV infection;
- To enhance the care of children through multi-disciplinary clinical research and health professional training; and
- To promote and foster the spirit of scientific and technical cooperation and international understanding through student and staff exchanges, collaborative research and training.

2.3 Implementing the Strategy

The COE is currently operating under its 2009-11 Strategic Plan, which was successfully operationalized this year after consultation with our partners. Key foci for the COE are:

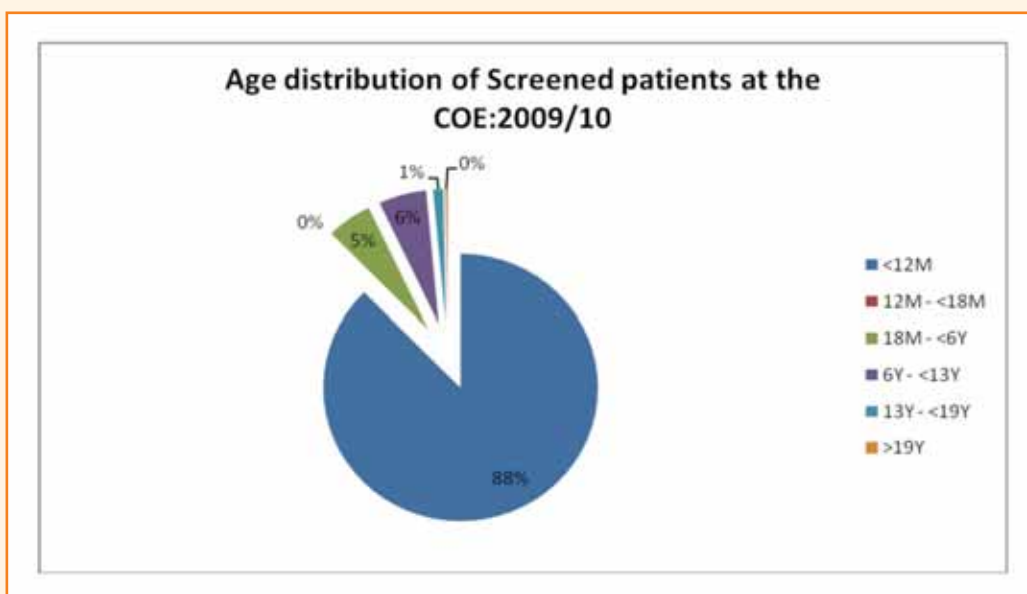
- Continuing to improve our comprehensive clinical care services to ensure that children and their families are cared for in the most appropriate way;
- Addressing adherence difficulties through improving psychosocial support to the children themselves, their caregivers and their communities, and ensuring that COE staff interact with patients in their homes through COE's “in-reach” programmes;
- Continuing to adapt our program strategies and models of prevention, care, and treatment with a commitment to suitability for replication in Botswana and elsewhere, and improve on existing models toward the same goal; and
- Continuing to deliver our diverse training and mentorship programs to health professionals across Botswana, ensuring that peripheral as well as centralized health facilities have the capability to deal with needs of HIV-infected children nationwide.

SECTION 3-PATIENT CARE

3.1 Screening Clinic

The Screening Clinic remains an important part of services provided at the COE. It is the entry point of all clients/patients coming to the COE seeking to know their HIV status. The clinic supports the testing of other family members, as the health of the child is dependent on the health of the family. The vast majority of these patients are from the national PMTCT program, as reflected in the chart below-88% of our screening patients in 2009-10 were less than 12 months of age. After delivery, Princess Marina Hospital and other health organizations with maternity facilities refer infants to the COE for DNA PCR testing at 4 to 6 weeks of age. Other clients/patients coming to the COE for screening are either self-referrals or referred from health facilities.

The screening clinic is operated by ARV nurse prescribers with the help of our physicians. The screening nurse ensures that all clients coming for testing undergo pre- and post-test counseling. All new and old clients with poor adherence to ARVs are encouraged to attend adherence sessions open to anyone who needs to know about HIV and adherence to antiretroviral treatment. A total of 915 clients/patients went through the formalized adherence counseling sessions in 2009-10.



Below is the table showing the positive and negative test frequencies for clients/patients tested during 2009/2010:

DNA/PCR

Months	Negative	Positive	Awaiting Results	Total
July 2009	36	1	0	37
August 2009	30	4	0	34
September 2009	39	3	3	45
October 2009	13	1	0	14
November 2009	14	1	3	18
December 2009	13	2	1	16
January 2010	36	3	2	41
February 2010	36	3	0	39
March 2010	50	2	1	53
April 2010	19	3	1	23
May 2010	26	1	1	28
June 2010	2	0	18	20
TOTAL	314	24	30	368

RAPID TEST

Months	Negative	Positive	Total
July 2009	6	4	10
August 2009	16	7	23
September 2009	10	5	15
October 2009	5	4	9
November 2009	4	3	7
December 2009	14	2	16
January 2010	8	2	10
February 2010	13	1	14
March 2010	5	2	7
April 2010	6	0	6
May 2010	9	0	9
June 2010	12	1	13
TOTAL	108	31	139

3.2 Paediatric Infectious Disease Clinic (PIDC)

The Paediatric Infectious Disease Clinic (PIDC) at the COE remains one of the largest providers in the world of antiretroviral therapy for children. Part of the Government of Botswana's National Antiretroviral Program known as MASA ("new dawn" in Setswana), the PIDC provides at no charge comprehensive HIV/AIDS treatment and care services to all Botswana children. The PIDC team is comprised of nurses, physicians, social workers and psychologists who work together towards achieving excellent, comprehensive treatment and care of children infected and affected by HIV. Since the PIDC's inception, thousands of children have been initiated on ART by PIDC staff. At the end of June 2010, the number of active patients on antiretroviral therapy at the COE was more than 1,700, as many patients have transferred out over time to local clinics supported by the COE's mentoring program.

The BANA-2 study was completed in November 2009 and all patients were transitioned to the PIDC. We received the first patient from the study on 18/11/2009 and the last patient on 26/02/2010 bringing the total number of transitioned patients to 501. This pushed our daily number of patients from an average number of 50-80 to 80-120 - a challenge, as personnel numbers decreased during 2009-10. However, the transition went smoothly. We give thanks to the Baylor Team for their collectivism and their team spirit. This could not have been possible without their commitment.

Additionally during 2009-10, the PIDC has continued working towards multiple goals, including that of aiding decentralization by transferring stable children who are doing well on therapy to ART centres nearer to their homes, as well as expanding the role of nurse prescribers within the COE.

i) Nurse Prescribers

The Nurse Prescriber program at the COE continues to function well, with nurse prescribers taking on a more prominent role during 2009-10 in the management of stable patients on ART. Nurses mentored in the provision of paediatric HIV/AIDS screening, care, treatment and provision, our nurse prescribers demonstrate the potential for task-shifting to be both implemented and optimized in clinical care settings in Botswana, where high HIV prevalence and limited physician numbers dictate an imperative to involve non-physician providers in care models if universal access to HIV/AIDS care and treatment is to become a reality. The COE is proud of its leading role in this critical regard, and looks forward to the continued growth and development of its nurse prescriber program in the coming year.

ii) Challenge Clinic

Initiated in July 2008, the Challenge Clinic strives to address the COE's most complicated cases in accordance with the 2008 Botswana National HIV Guidelines. Focused on children failing second line ART, the Challenge Clinic works toward the following goals for the approximately 30 patients currently enrolled, 95% of them adolescents:

- To improve children's quality of life, not only from a physical perspective, but also from a psychosocial angle.
- To collectively decide on plans to improve virologic outcomes in cases of treatment failure.
- To serve as a forum for keeping our clinical staff updated as to the best practice in advanced HIV management, increasing our clinicians' collective understanding of approaches to complicated HIV cases.
- To leverage our approach to treatment failure such that future therapeutic options remain viable for our currently failing patients.

Attended by physicians, nurses, social workers, psychologists and other clinic staff concerned with our complicated patients' outcomes, the Challenge Clinic meets bi-weekly to foster a collective response to the challenges faced, and to make recommendations and pose solutions from a multi-disciplinary perspective. The Challenge Clinic also benefits from the invaluable contributions of our In-reach and Outreach teams, who play such special roles in the care of this population. The Challenge Clinic last year added a didactic session covering the latest evidence-based approaches to the management of complicated HIV cases, and this has been warmly received by the COE community.

This year, the Challenge Clinic was instrumental in driving a process of developing the COE's first official policy on use of advanced regimens containing the new antiretrovirals raltegravir and darunavir, with the successful utilization of these new antiretrovirals in adolescents failing lopinavir/ritonavir-based second-line antiretroviral therapy. As well, with the assistance of the Outreach program, COE-based specialists began longitudinal mentoring in Challenge Clinic development and management of paediatric patients failing antiretroviral therapy in Francistown and Palapye. It is hoped that the coming year will see an expansion of this special mentoring - a key to Botswana's long-term response to managing children on antiretroviral therapy and assuring persistently good clinical outcomes countrywide - to Serowe, Maun and elsewhere as able.

iii) In-reach Project

The In-reach project has grown from strength to strength. With routine daily home visits carried out from Monday to Thursday and emergency visits every Friday and some Saturdays to cater for working caregivers, the Team visited 575 children and families during the reporting period and carried out:

- Adherence counselling.
- Pre-test and post-test counselling for family members living in the household, with those found to be HIV-positive referred to local clinics for further tests and subsequent enrolment.
- Clinical, socioeconomic and nutritional assessment with relevant referrals.
- Psychological and social assessment and support with referral to relevant stakeholders.

139 of the children visited were orphans and 247 family members (132 adults and 115 children) took routine HIV tests. 16 adults and 4 children had positive results.

In March 2010, the In-reach program received recognition from USAID's AIDSTAR-One Promising Practices Database. After a thorough vetting process, In-reach became just the second NGO program in Botswana to achieve this prestigious recognition. In-reach's best practice recognition can be viewed online at http://www.aidstar-one.com/promising_practices_database/search

The Team plans to continue scaling up home visits, especially during school holidays.

3.3 Adolescent Programme

The Botswana-Baylor COE Adolescent Programme started in 2005 with only 23 teenagers. The adolescent population in the COE has continued to grow and by June 2010 the clinic had enrolled nearly 600 teenagers. We estimate that by the end of 2011 the COE will have close to 800 teenagers. Based on age-stratification data collected from a representative sub-section of our client population, the average age of our paediatric patients is just over 10 years old. In the next couple of years, when our 8 to 10 year olds reach adolescence, the age makeup of our patient population will shift dramatically toward the teenage years. A conservative nationwide estimate of Botswana's teen ARV needs indicates that by 2011, nearly 4,000 adolescents will need ARVs. In addition to medical treatment, these teens will need specialized care and support to help them overcome the hurdles of puberty and adolescence. If safety nets in the form of psychosocial support interventions are not put in place throughout the country in the very near future, these adolescents will be condemned to treatment failure, thereby reversing the great strides Botswana has made in combating paediatric HIV.

As teenagers are at a critical time in their lives, they need to be equipped with the appropriate skills to help them in their transition to adulthood. In particular, teenagers need education on how to live positively with HIV and understand that there is life beyond an HIV diagnosis. Our adolescents are given education about the disease, its treatment and the importance of taking their medications correctly and consistently. Physicians, nurses, social workers and other staff members involved in the Adolescent Programme have extensive expertise and experience in working with the adolescent population. Due to the challenges that teenagers face, increased attention is given to psychosocial support, particularly with helping teens to deal with stigma and misinformation related to HIV in their families, communities and schools. Although the challenge of addressing the needs of a rapidly growing HIV-positive adolescent population is daunting, the Botswana-Baylor COE has risen to the challenge and has already spearheaded a number of medical and psychosocial interventions for its teen patients, including an innovative Teen Club peer support programme described elsewhere in this report.

Since February 2009 we have implemented a bi-monthly Adolescent Forum which consists of a social worker and/or psychologist-led case conference of challenging adolescent patients, with a focus on those dealing with psychosocial issues, as well as programmatic updates on Teen Club and other adolescent-focused initiatives. The Adolescent Forum is attended by a variety of healthcare providers with an interest in adolescent issues, such as physicians, nurses, psychologists, social workers and auxiliary staff. In line with local and networkwide BIPAI priorities, in early 2010, a subcommittee of service providers was formed to address the issue of transitioning our older adolescents into adult care. In June 2010, a series of focus group discussions were held with our adolescent patients and their caregivers to gather their opinions on the various aspects of transitioning. By 2011, we hope to have a system and protocol in place that will allow us to provide our older adolescents with a healthy transition into adult care. Through the Adolescent Forum and other innovative interventions, we strive to build the capacity of our staff to provide our adolescent patients with the highest possible standard of care.

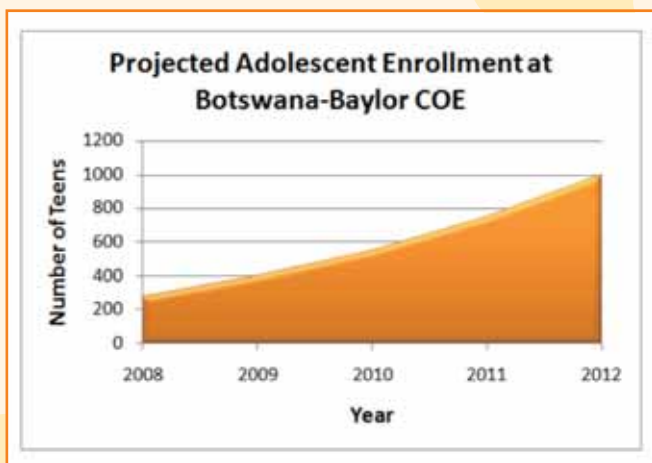


Table 1: A Projection of the Adolescent Enrollment at the COE

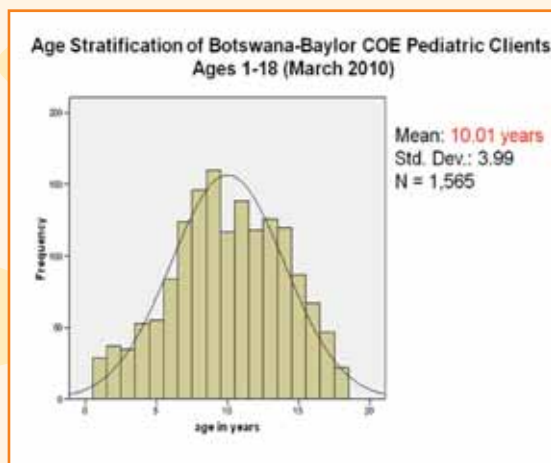


Table 2: COE Paediatric Patients' Stratification by Age

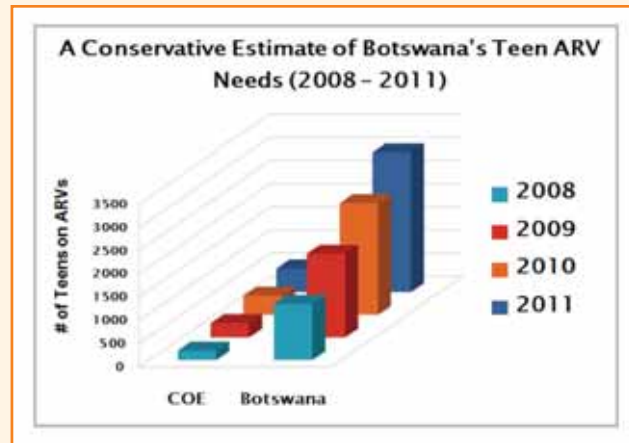


Table 3: A Projection of Adolescents' ARV Needs (2008-2011)

3.4 Psychosocial Interventions

i) Clinical Psychology

The clinical psychologist at the COE continues to deliver effective psychological interventions for children and families, including counseling and psychotherapy. Approximately six patients are seen daily for intensive sessions and many others for less-intense visits. Each age group has its own challenges. For example, approximately 80% of primary school aged children (ages 7- 13) present have learning difficulties, while our teenagers' chief issue is adherence to antiretroviral therapy due to psychological factors. Our caregivers also have challenges, with depression being a common complaint, along with a need for developing general coping strategies.

2009-10 has seen exciting developments within the psychology program, including the establishing of a Teen Mothers Support Group and progress made towards establishing a Caregiver Support Group and a Workplace Health and Wellness Program for staff.

ii) Social Work Department

The primary goal of social work is to optimize client functioning by providing quality services in the most efficient and effective manner to individuals with multiple complex needs and their significant others. Social workers at the COE have a strong focus on client and systems strengths and the development of self-care skills that go beyond the disease and symptom that focus on the medical model. The overall focus of social work case management is to build on the medical model, bringing in the social aspect of care that has a perspective to assess strengths and challenges within a systems framework. Social work case management focuses on psychosocial needs and aspects of a client's life. Attention to health care or disease management is part of the social work case management model.

The social work office currently sees formally more than 150 cases monthly. Leading issues include: disclosure concerns, adherence problems, lack of family support, stigma-related cases, social assessment cases (home visits), emotional and behavioral problems, delinquency and cases where child protection is required.

The department works closely with the psychology department on inter-related cases to re-enforce holistic care, including the Teen Mother Support Group and Health and Wellness programs mentioned above.

iii) Adherence Counseling

Additional counseling within the COE takes place in the form of a structured and detailed Adherence Counseling session, conducted daily. All new patients, and existing patients with poor adherence to antiretrovirals,

are encouraged to attend. Additionally, the class is available to anyone who desires or needs to learn more about adherence to ART. The class is popular, with more than 900 clients attending in the past year.

Adherence classes play a major role in assisting and maintaining our patients' success with their antiretroviral regimens. After attending the classes, many of our caregivers express and demonstrate better understanding of adherence, and this translates into better adherence performance on the part of their children. The classes also serve as important fora for caregivers to interact with other caregivers facing similar challenges, and to find encouragement and support from other caregivers and COE staff.

iv) Teen Club

The mission of Teen Club is “to empower HIV-positive adolescents to build positive relationships, improve their self-esteem and acquire life skills through peer mentorship, adult role-modeling and structured activities, ultimately leading to improved clinical and mental health outcomes as well as a healthy transition into adulthood.” The period of July 2009 to June 2010 was one of tremendous growth for the Teen Club programme at the Botswana-Baylor COE, including the establishment of our 5th satellite Teen Club site in Maun. Our Teen Club satellite partners now include the following local NGOs and ART sites:

- **Francistown:** Light & Courage Centre Trust, Nyangabgwe Referral Hospital (formed October 2008)
- **Molepolole:** Hope Worldwide Botswana, Scottish Livingstone Hospital (formed November 2008)
- **Mochudi:** Stepping Stones International, Deborah Retief Memorial Hospital (formed September 2008)
- **Mahalapye:** Mothers' Union Orphan Care Centre, Mahalapye District Hospital (formed May 2009)
- **Maun:** Bana Ba Letsatsi, Letsholathebe District Hospital (formed November 2009)

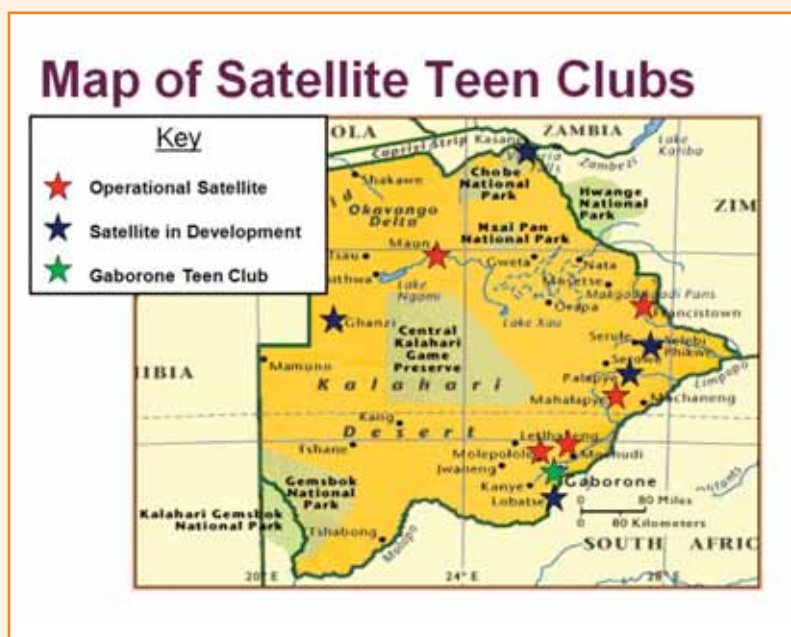
As detailed in a memorandum of understanding between the involved parties, each partner agrees to support Teen Club activities in the following manner:

- **Botswana-Baylor Children's Clinical Centre of Excellence:** provides funding for teen transport and meals, training for adult volunteers, and administrative oversight.
- **NGO Partner:** serves as primary implementing body of satellite Teen Club, coordinates and screens adult volunteers, submits receipts, attendance records and event summaries to Botswana-Baylor COE.
- **ART Site:** provides referrals for HIV-positive adolescents to attend satellite Teen Club events as well as medical follow-up and counseling for Teen Club members.

Partnering with NGOs and healthcare partners at the local level has allowed the Botswana-Baylor COE to decentralize its psychosocial care and support interventions for adolescents, namely Teen Club, to various towns and villages throughout Botswana. Our current enrolment of active Teen Club members nationwide now exceeds 500 adolescents! The expansion of our Teen Club satellite sites would not have been possible without the generous financial support of Barclays Bank Botswana and UNICEF-Botswana.

Curricula Development

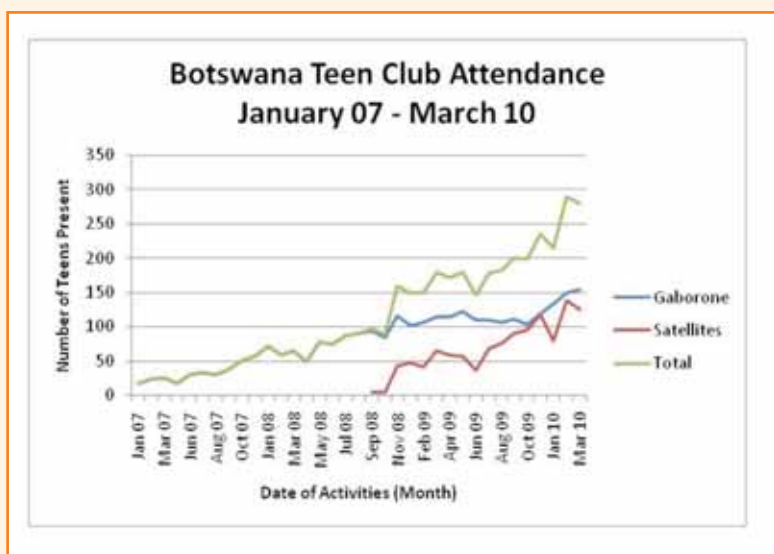
This period saw the launch of Teen Talk, our question-and-answer guide for HIV-positive adolescents, the printing of which was sponsored by a generous donation from staff of Barclays Bank Botswana. Teen Talk covers a variety of topics including ARVs, adherence, friendship, nutrition, exercise, reproductive health, positive prevention, multiple concurrent partnerships, safe male circumcision, prevention of mother-to-child transmission, emotions and healthy



disclosure. In July 2010, we presented an abstract about the development of Teen Talk at the XVIII International AIDS Conference in Vienna, Austria, which was very well received. The Teen Talk guide, with both English and Setswana translations, can be downloaded from our website (<http://botswanateenclub.wordpress.com/>). Next steps include rolling out the guide to all ARV hospitals in Botswana and adapting the guide for distribution in other African countries.

Adolescent Centre Development

This period also saw the approval of our change of land use application by the Gaborone City Council for our proposed Adolescent Centre, located across the street from the COE. First of its kind on the African continent, the Adolescent Centre will be a safe and welcoming environment for HIV-positive teens to visit during their monthly clinic check-ups or during holidays and after-school hours. The Centre will contain inviting and comfortable communal and recreational areas with games and other activities for teens. Staff will provide free psychosocial consultation, sexual and reproductive health education, family planning and life skills education for HIV-positive teens, their caregivers and staff members of partnering non-governmental organizations (NGOs). Though we are still in the process of raising funds for the Adolescent Centre renovations, we have managed



to procure a caravan with generous financial support from the Canada Fund. During 2011, we hope to relocate our Teen Club staff to the caravan while the main Adolescent Centre structures are being built and renovated.

Fundraising Events

In March 2010, we held a Fundraising Training Event for adult volunteers and staff members from our Gaborone and satellite Teen Club sites. The purpose of the training was to capacitate the participants on how to plan and implement a successful fundraising event including budgeting, marketing, and monitoring and evaluation. The training was very successful and the participants were able to plan two fundraising events: a Football Extravaganza during the World Cup quarter finals and a “Lobebe Lwa Ngwao” art show/cultural evening. The Football Extravaganza was held on 3rd July 2010 and involved participation from a number of celebrities, including 3 players from the national Zebras football team. Over P18,000.00 was raised to benefit the construction of our Adolescent Centre and a number of important contacts were made for future fundraising opportunities. We would like to extend a very warm thank-you to everyone who contributed to, and attended, the event. Our major sponsors, Phakalane Golf Estates, WUSC (World University Service of Canada), Multichoice, The Works, Mmegi, and Yarona FM, helped us immensely. We are also grateful to those individuals and corporate sponsors who purchased a table at the event. Your support has brought the Adolescent Centre one step closer to completion!

Peer Education

Many of the COE's adolescent patients have psychosocial needs that limit optimal care. To prevent treatment failure and address psychosocial challenges related to adolescence, a Peer Educator, Katlego Koboto, was employed in March 2010. Her responsibilities include peer counseling, mentoring, life-skills education and training. Between March and June 2010, our Peer Educator saw 68 clients. The five most common consultations were for Teen Club referrals, psychosocial issues, medication adherence, other medical issues, and life skills education. As more HIV-positive children survive and enter adolescence, the demands for such services will increase.

Multiple Concurrent Partnerships (MCP) Campaign

In support of the goal of zero new HIV infections by 2016, the Government of Botswana has targeted the reduction of Multiple Concurrent Partnerships (MCP) as a primary strategy for halting HIV transmission, called the O Icheke (Break the Chain) campaign. With funding from World Bank, the Teen Club programme has partnered with the National AIDS Coordinating Agency (NACA) to implement the “One Love” Campaign amongst HIV-positive adolescents directed at affecting attitude and behavioral changes related to MCP. As of June 2010 13 Peer Educators have been trained and have shown increases in knowledge acquisition based on pre and post-test scores. We have also reached hundreds of adolescents with educational activities. In 2011, we intend to address intergenerational transactional sex through the inclusion of new topics in our life skills curriculum (including negotiation skills, goal setting, and perceptions of masculinity by males) as well as the expansion of our target group beyond adolescents to include their broader support systems, such as caregivers and teachers.

Goals for 2011

Our primary goals for 2011 are to develop an Adolescent Centre that will provide a variety of drop-in services such as counseling, tutoring, life skills education and recreational activities; to establish new satellite Teen Club sites; to hire additional staff commensurate with the growth of our programme; to move forward with plans for a Teen Pregnancy Support group; and to continue developing various curricula and toolkits based on best practices developed regarding the care and support of HIV-positive adolescents. We look forward to nurturing our existing relationships with donors and satellite site partners as well as pursuing new partnerships to expand the scope and reach of the Teen Club programme. We intend to be nothing less than a model of excellence for the provision of psychosocial support to HIV-positive adolescents and we look forward to working with partners both locally and regionally to expand the Teen Club model throughout sub-Saharan Africa.



Testimony of a Teen Leader


MY STORY

By Thato Chris Ramotswe Jr.

About Me

I was born 17 years ago as Thato Chris Ramotswe Jr. To be more specific with the date, it was 8th November 1992, on a Friday. I was born in a village in the north of Botswana called Maun. I'm the only child of the late Thabo Chris Ramotswe Sr. and Caroline Vivian Ramotswe. I spent most of my life with my father because my mum passed away during March of 1996. She died when I was only 3 years and some months old. My mother worked at Standard Chartered Bank and my father was a soldier, Lieutenant Ramotswe. I stayed with my dad and his parents after my mother died until my dad died too.

Life with my grandparents was one I wish that I could forget. I had to live with them because my father usually had to go to military camps, which forced me to live with his parents. I can recall the times I saw my father when he bought me toys and all sorts of kids stuff. I'd only see him when he was dropping them off, and then he'd leave again. He did love me- I was his son, his blood, his heir. We lived in Maun before moving to Francistown. My grandparents didn't treat me well; they abused me. My mother's sisters would visit and bring me some things, and immediately after they left my grandmother would throw them away saying, "Don't they think we can take care of him?" The year 2000 came when, sadly, I lost my father. Although I was only 7 years old, I thought my life was



over. My mother's family couldn't live to see me suffer so, after my father's funeral they took me in. Both of my parents were buried in Maun. I recall that day when I cried and cried, seeing the coffin lowered down into the ground, military guns shooting non-stop. My mother's sister took me to my mother's grave to see it, and I cried even more. My mother's sisters couldn't stand to see me being neglected by my grandparents; I was even wearing torn-up clothes during my father's funeral.

That was when Selina Seitshwaro, my mother's sister, filed to adopt me. She was given full custody of me, and that was the last time my dad's family saw me. In 2000 I did Standard 2 (2nd grade) at Ikuke Primary School and managed to pass although I had only attended since July. I did my Standard 3 (3rd grade) there and still passed. In 2002, my aunt (who I now called "mother") wanted a brighter future for me and put me in a private English-medium school. I wrote the entrance examination for Galimo School and passed. I was at Galimo English Medium School from 2002 till 2009 when I wrote my IGCSE (college entrance) exams. I am now applying for University studies.

The whole time I lived with my new mother, Selina, are memories never to be forgotten. She cared for me, gave me as much love as she gave her own two sons, gave me everything I wanted, and looked after me. There were rough patches between me and my cousins but we always managed to overcome them. The problems were mainly due to the love their mother gave me; they didn't understand the fact that I had never had that motherly love before, and that's all that my aunt/mother was trying to give and show.

About My Status

The years 2000 to 2003 were great years, but then came the year I will never forget, 2004. It was during this year that I got really sick, so sick that it worried my mother. She didn't know what was wrong; doctors said it was flu, some said it was just fever. My mother didn't want to stop there because it got really serious. She took me to a private doctor named Dr. Kennedy, in Kanye. During my first exam, I told him about the diarrhoea, the fever, and the weight loss. He suggested that I take an HIV test. That shocked and frightened me a lot; I was afraid to hear that I might have HIV because I thought of it as the worst disease that ever existed. My teachers at school said it was a death sentence.

I started telling the doctor that I had never had sex or shared needles with anyone. Nevertheless, I took the test and was told to come back after one week. During the rest of that week, I couldn't focus at school because all I could think about were my test results. Then the Friday came when I was supposed to get my test results. My mum and I went to the doctor and sat down as we waited for the results. Our turn came to see the doctor. Something gave me the creeps when I entered the exam room so I changed my direction. I first went to the toilet. Eventually I had to go back in, so I did. The doctor started by saying, "Chris, your test results have come, and I've been talking to your mother about them. You are not alone in this; there are a lot of people in Botswana who are in your situation so please don't think that you're alone. I'm sorry but your results have come back positive for HIV." The next voice to speak was my mother's when she said, "O seka wa tshwenyega ngwanaka, o na le nna. Ke tlile gogo tlhokomela (Don't worry my son, I'm here with you. I'm going to take good care of you)". I was just 12 years old; how could I have possibly got HIV? I had never had sex. The doctor referred us to the Botswana-Baylor Children's Clinic in Gaborone. We went for our first check-up, and I was so shocked to see a whole lot of children who were HIV-positive like me. I saw the nurse and doctor and started the treatment known as antiretroviral medications (ARVs). I had to come for a check-up every month. I would usually do the same thing: physical tests, see the nurse, see the doctor and wrap it up by seeing the pharmacist for pill refills. This same procedure has been happening ever since. I had a favourite doctor and nurses at Baylor: Doctor Elizabeth Lowenthal and nurses Tshume and Pandor. Then there was one whom I always talked to about my life and who always assisted me when I needed help, the Nurse in Charge, Mma Mathuba. She has been with me since I started up until now, along with the other nurses. Along the way, there have been others who have helped me during this period of my life: Dr Paul, Dr Jeff, the psychiatrist Lindsay Spencer-Mullan, and the understanding social worker Bakani Johnson.

I live a normal life now, one in which I know I'm not the only child living with HIV all thanks to the above-mentioned people. But above all else, there is one special person who has been with me through this whole journey, one who gives me her love, her kindness, her shelter, her property and all that I ever needed, none other than my second mother, Selina Seitshwaro.

Another Tragedy

In September 2008, my mother Selina Seitshwaro started to get sick. I thought it was nothing major until she started to have trouble getting around. I remember that in October of the same year, I found her sleeping when I got home from school, and that worried me a lot. She usually slept when she knew that all her children were back from school and that they were indoors, so I knew something was really wrong. I purposely woke her up and asked her if she was okay. She told me, "Thato, ke a lwala ngwanaka (I'm sick, my child)." My aunts were informed, and she was taken to live in Gaborone with her sister. She was bound to a wheelchair soon thereafter. She recovered a bit, though she could not do things as before. Then she went to Princess Marina Hospital on 5th January 2010 for her normal check-up. When she returned home, her condition worsened and a few hours later that day she passed away. The woman who had been with me for close to 9 years, the shoulder I cried on, the shield of my life, the person I depended on, had passed away. She was laid to rest on 9th January 2010 in Gaborone. Rest in peace Mum.

About Life

I believe that everything happens for a reason and that God has plans in everything that happens to us. All we ought to do is to move on, accept life, and the circumstances around us. God answers our prayers, and I have faith that a miracle will happen in my life one day. I've accepted myself as an HIV-positive young man, that I've lost my father and two mothers, but here I am, still living a normal life. I've had challenges in life, but I've managed to overcome them. All this has been possible because of the positive attitude I have towards life.

There I was; I had someone who took care of me, but she died. But it doesn't mean my life has to end because she's not there for me, No! I get encouragement from my aunts now. They love me, they take care of me, and they provide me with everything I need. I believe that wherever my father and mothers are, they love me and they are looking after me. Let's accept ourselves and live a normal, healthy, happy life. Don't think of what happened, asking "How?" and "Why?". You will never get answers, and we cannot always change the circumstances around us! We should surrender all to God and move on with life.

Teen Club & CAMP HOPE!

The year 2004 eventually passed and then came the year 2005 when, in May, a lady who worked at Baylor started what is now called Teen Club. Teen Club is a peer support group for HIV-positive adolescents who are treated at the Baylor Clinic. This club started with only four members: Me, Gomolemo, Toka, and Thebe. We usually met twice a week and, during our meetings, we would paint, draw and just enjoy ourselves. For me, Teen Club is my second home because those of us in the club understand each other, know each other, and are proud of ourselves. Not everyone knows their HIV status, and there are those who just refuse to get tested because they are afraid of what will happen if they test positive, but it is not a crime to be HIV-positive; it does not mean you're excluded from the love of God. The number of our Teen Club members kept increasing each year. We also started holding a camp called Camp Hope, for children at the clinic ages 9 to 12. This camp takes place at Maru-a-Pula School and is 5 days long. The camp is for those who have trouble taking their medication, so all the kids take their meds at the same time during breakfast and dinner, and everyone sees how easy it is to just take their pills and swallow them with water. Activities during the camp include sports, a session on food and nutrition, a trip to Mokolodi, arts and crafts (making dolls), playing board games, and on the second to last day we have the Camp Hope Olympics. Last year, during Camp Hope 2009, was the first time they had teen counsellors, including me, at the camp. The campers had a chance to learn from the teen counsellors about how to live positively and how to keep fit. It was amazing for me to hear the younger kids saying they didn't think us teen counsellors were HIV-positive; they thought that, because we looked big, fit and healthy, we weren't positive.

After the 13 year-olds graduate from Camp Hope, they go on to Teen Club. Teen Club is a place where an HIV-positive teenager can just be him or herself. Our members range in age from 13 to 19. Teen Club is also a place of learning and fun as the activities are both educational and recreational. Gaborone Teen Club, our club in Botswana's capitol city, has grown from me and the other original 3 members to an average attendance of over 150 every month. We've even had to divide the club into two: the younger group (13- 15year olds) and the older group (16-19 year olds). With 10 Teen Leaders to help lead the activities, of which I am one, everything goes smoothly.

Each month, one group will stay at the clinic to do an educational life skills activity, and the other group will go on a field trip to do something recreational. Some of our life skills sessions have included "Love, Sex and Dating," "Adherence," and "Disclosure." We've also developed a session with Barclays Bank of Botswana called "Financial Literacy." During this session we teach the teens how to budget, save, and manage their money. Recreational activities include going swimming at Maru-a-Pula School, visiting the museum, and playing sports at the Gaborone Senior Secondary School. The other Teen Leaders and I have been fully trained on Communication Styles, Coaching Skills, Team Work, and everything you can think of to make us good leaders, which all contributes to how well we run Teen Club. That's why we even have the belief that we can do the work without the help of adults. I remember one Teen Club event we had where there were less than 10 adult volunteers. We showed everyone that we could run everything ourselves, and the day just went on as usual. Normally, we have about 20-25 adult volunteers. All the planning, buying of food, and organizing of venues for the events wouldn't be possible without the help of our Teen Club elders, those adult volunteers whom we call our parents at Teen Club. I want to thank the Coordinator of Teen Club, Edward "Kago" Pettitt, the Satellite Sites Development Officer, Ntobelezdi "B2" Boitumelo, the hardworking Project Assistants, Agatha Offorjebe, Pavlo Bereas and Lorena Tolle, and obviously the other Teen Leaders, some of whom have been with Teen Club since the very beginning, back when there were only four of us. All of the aforementioned people help make Teen Club happen every month, but none of this would be possible without the teen members and Baylor patients themselves. I can't even begin to start telling you how Teen Club has helped me, but you can see how far I've gone in life, and it's all because of this wonderful club.

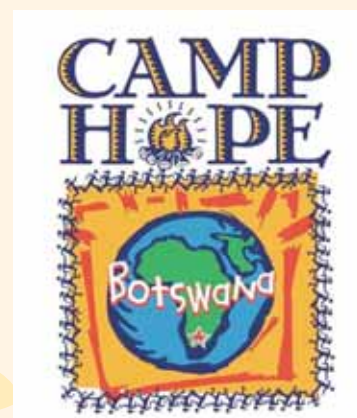
In Conclusion

There was a time I thought I'd never say this, but being HIV-positive has had its blessings. No one knows how their life is going to end up or what will define the short time they have here on Earth, but for me it has been being HIV-positive. Maybe I wouldn't have developed my optimistic perspective on life if I had been HIV-negative and had never gone to Baylor Clinic or Teen Club; maybe I would have ended up a thief or a drunkard. Now I live a cautious life, one in which I look after myself well, eat well, take my meds every day on time, a life in which I have accepted who I am. I'm positive and proud to be me. I know I'm making my parents proud; the life I'm living is the one they would have wanted if they were still alive and I know that even though they are not here with me, they are proud, they love me, and they are looking after me. It's God's will how things turn out to be, so let's accept that and then our lives will be how we want them to be.

v) Camp Hope

A number of Setswana camp cheers could be heard throughout Camp Hope 2010, a 5-day overnight camp hosted at Maru-a-Pula School for 48 vulnerable children ages 10-12 from the COE. The goal of Camp Hope is to empower the most vulnerable members of Botswana's paediatric HIV population to build positive relationships, improve their self-esteem and acquire life skills through recreational and educational camp interventions, ultimately leading to improved clinical and mental health outcomes as well as a healthy transition into adolescence. Camp Hope has been part of the COE since 2005 and has continued to grow and become more established. Teen Club staff members Ed Pettitt and Ntobelezdi Boitumelo co-directed the camp. The COE's clinical psychologist, Onkemetse Phoi, served as Psychosocial Director of Camp Hope. Dr. Leah Scherzer was the Camp Hope Medical Officer and did an amazing job ensuring the health of our campers with the support of other COE doctors.

The children chosen for camp were from the COE Clinic population, with a strong preference for those children in challenging psychosocial situations who have significant problems with medication adherence. Camp Hope strives to give each child the opportunity to normalize their social experiences and improve their outlook on life. In addition,



Camp Hope endeavours to improve the ARV adherence of the children through Directly Observed Therapy (DOT). We also included Teen Leaders from Teen Club as counselors and members of the camp Leadership Committee. The teen counselors brought an unmistakable energy to each day's activities, and were instrumental in motivating the campers each day. The teen counselors also served as role models and mentors to which the campers could relate, particularly through their reinforcement of the importance of maintaining good ARV adherence.

There were a total of 34 adult volunteers. The adult volunteers were a mix of COE staff and qualified staff from community-based organizations. These tireless volunteers, along with the teen counselors, helped lead a variety of exciting activities including cooking & nutrition, character development, arts & crafts, dancing, sports, board games and a talent show. In addition, a Feelings and Emotions session was led by our psychosocial team who helped the children draw and discuss their feelings in a safe and comforting environment.

A Community Partners Tea allowed our partners and sponsors to get a first-hand look at how Camp Hope was enhancing the lives of our children and gave them a chance to get involved in a "hands-on" way by participating in the Camp Hope Olympics. The COE hopes that in the years to come, more local organizations will take ownership of the financial and material support for this valuable camp for Botswana's HIV positive children.

When asked about the impact of Camp Hope on their lives, a large majority of the campers noted, "strongly agree" to the following:

I have more hope for my future.

I feel better able to do well in school.

I feel better able to have a good diet (eat healthy foods).

When asked about the impact of Camp Hope on their lives, a majority of the counselors noted "strongly agree" to the following:

with similar objectives.

I feel better able to lead small groups.

I have a better understanding of the needs of HIV-positive children.

I feel better able to advise my peers on issues pertaining to HIV-positive children.

I have expanded my network of colleagues to whom I can go to for support.

Some additional comments from our campers included the following:

"I am very happy about Camp Hope!"

"This was rocking lefatshe (the world)! Camp Hope rocks!"

"I enjoyed Camp Hope and I would like to come back again next year!"

"Camp Hope was rocking, thank you guys for making Camp Hope."

"I would like to thank the people who invited me to Camp Hope."



Acknowledgment and gratitude is owed to all the campers, counselors, and volunteers for their contribution to the success of Camp Hope 2010. The positive impact on these most vulnerable children could be seen in their smiles during camp, and in their sad faces at its conclusion. For many, it was a week to remember and one of great transformation. The fun and supportive environment Camp Hope provides for these children would not have been possible without the generous support of Shell Oil Botswana and our other sponsors - AIDS Foundation Houston, UNICEF, Seabelo Express, Maru-a-Pula Secondary School, Desert Streams Fellowship and Mokolodi Nature Reserve. To our sponsors, volunteers, and counselors: thank you for helping to build a brighter future for Botswana's children!

Camp Hope: Story by Katlego Koboto, Peer Educator

“An experience to never forget. Meeting new shy and passive faces, and then getting cheerful and active faces after two days. Dedicated volunteers worked towards making a difference in HIV- positive children's lives. Fun and games were the order of the week, but behaviour change and character development sessions were included, to shape the children's character as they enter adolescence. The most aspiring moment of Camp Hope was watching those children with shells break open into laughter and enthusiasm. This really shows we are on the right direction in having a positive future. “



3.5 Family Model Clinic (FMC)

Particularly in resource-limited settings, HIV/AIDS is a family concern. A family-centred approach to HIV/AIDS prevention, care and treatment, where adult and paediatric services are provided together in a single setting offers a range of benefits. Emphasis has been placed on family-centred HIV/AIDS care and treatment by the World Health Organization to include providing appropriate treatment, care, and support to mothers and fathers living with HIV and their children and families. The momentum generated by this focus provides an opportunity for HIV/AIDS programs to integrate efforts in the formerly distinct realms of paediatric and adult care and treatment into a single model of care centred upon the family.


Along these lines, the COE has operated a Family Model Clinic (FMC) for the past eight years. With the child as the entry point, the COE's FMC has proven to be highly successful and has attracted attention from antiretroviral therapy sites throughout Botswana, in many of which it has been replicated. Using entry criteria targeted towards families at risk of or already experiencing failure of therapy, the FMC has allowed several emphases to be realized:

- Addressing the health of caregivers, directly benefiting their children's health.
- Facilitating HIV testing for other family members.
- Providing a safe and supportive atmosphere for disclosure to family members and development of social support structures within the home.
- Screening for opportunistic infections in the home, including tuberculosis (TB).
- Providing a platform for provision of and referral for important non-HIV primary care services, such as cervical screening and chronic diseases management, including diabetes and hypertension.
- Addressing chronic mental health issues common in HIV-infected and affected individuals and families.

In the past year, the FMC has seen many exciting developments, including refinements to its eligibility and referral procedures, and the development of a locally-relevant package of primary health care services. We hope to see operationalization of the package of services in the coming year, as well as the expansion of the FMC's vital role in the COE's care and treatment fabric.

3.6 Nutrition and Diet

The impact of nutrition interventions in the general health outcomes of children seen at the COE is overwhelming.



The majority of our children are now doing much better nutritionally than they were when they first enrolled at the COE. Data collected during follow-up visits of these children indicate that severe acute malnutrition is no longer the major concern for most of the children that we review on scheduled visits. Cases of severe acute malnutrition tend now to be few, and generally seen only in those children presenting for care for the first time - children who have either been recently diagnosed with HIV or are transfers from other institutions around the country where treatment was delayed or care had been poor. Our message to caregivers and health professionals in the community is that children should be diagnosed early in order to accord prompt treatment! Any caregiver with children experiencing constant/persistent ill health and poor growth and development should be taken to the nearest health facility for HIV testing of the children so that timely HIV treatment and nutrition interventions can be undertaken.

As the fight against acute malnutrition is being waged and being won, we are now faced with another form of malnutrition - chronic malnutrition and its consequences, including stunted growth. The majority of our children experience poor linear growth or stunting which culminates from a combination of poor nutrition and ill health over a prolonged period of time. So as the nutrition status of our children improve over time, we tend to see an increase in their weight/age (WAZ) and weight/height (WHZ) parameters and not much change in linear growth. Stunting is very difficult to reverse in childhood and this presents a challenge more so that it is strongly associated with overweight/obesity and associated co-morbidities in adult life.

Some follow up data collected from patients does however present hope in the sense that some previously stunted children do begin to grow or catch-up in height during and after the pubertal stage as long as they continue to receive adequate nutrition. Continued provision of an adequate diet and care are paramount in fight against childhood malnutrition. At the COE, all children who are found to be malnourished or are growth faltering are given nutritional guidance and counseling and are also prescribed nutritional supplements. We are fortunate to have the services of a dedicated and experienced nutritionist in this regard.

HIV is the principal cause of malnutrition seen in our children, but for the majority of our children, anthropological malnutrition is also at play here. This is so because malnutrition remains rife even in children who have viral suppression and a higher CD4 percentage (markers of success with antiretroviral therapy). In other children, malnutrition recurs once supplementary feeding and nutritional supplements are stopped. Some children (especially orphans and other vulnerable children) still experience malnutrition despite being on food basket supplies and/or receiving food coupons. This situation that we are currently facing further explains that the causes of childhood malnutrition are multifaceted and that the relationship between socioeconomic status and malnutrition is not as simple as it may seem.

3.7 Community Outreach

Clinical Mentorship and Support and Outreach Sites

In the past 12 months, mentoring continued in 25 outreach sites, including Challenge Clinics in Francistown, Palapye and Sekgoma (Serowe) and new local clinics in Francistown. The number of HIV-positive children managed alongside local medical officers and nurses doubled during 2009-10 from 2000 to 4000, with nearly 300 mentored visits at outreach sites monthly. 8 of these sites are covered by our paediatrician based in Francistown and the remaining 17 are covered from Gaborone using air and road transport. COE specialists continue to staff a busy 24-hour hotline for providers from around Botswana, always available to answer questions and provide support, even when not physically at sites.

3.8 Improving the Care and Diagnostic Strategies of Tuberculosis for Children in Botswana

i) Introduction

In late 2007, at the request of the Government of Botswana (GOB), and in collaboration with the Botswana National Tuberculosis Program (BNTP), the Botswana -Baylor Children's Clinical Centre of Excellence undertook several new activities to improve the quality and scope of paediatric TB diagnostic strategies in the country. Based on its extensive training and outreach network, the program was uniquely positioned to rapidly roll out training and mentorship in TB diagnosis, as well as strengthen paediatric HIV/TB services at sites where the program specialists are currently stationed: Francistown's Nyangabgwe Referral Hospital (NRH), Gaborone's Princess Marina Hospital (PMH), and Serowe's Sekgoma Memorial Hospital.

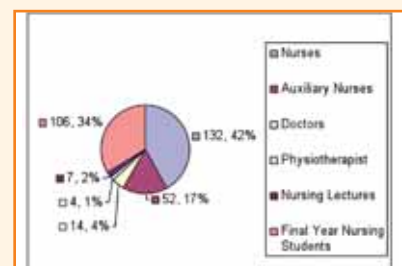
Following the successes of piloting the program at the above mentioned sites, the fourth site, namely Letsholathebe II Memorial Hospital in Maun was added to the list of the other 3 sites in January 2010. Currently, enhanced TB diagnostic support services are being delivered at the 4 referral hospitals and surrounding clinics. There have been many successes and a few challenges as enhanced TB diagnostic services for children have been rolled out. The project has been divided into 3 broad categories that will be discussed below.

ii) Sputum Induction Training of Health Care Workers

Our achievements so far include the successful development of the in-service sputum induction curriculum, sputum induction course manual and the training of healthcare workers of different background in the science of paediatric sputum induction on an on-going basis. In 2009-10, the COE trained a total of 202 health care workers of different background and specialties around Botswana in the science of paediatric sputum induction. In addition to this, the COE has trained a total number of 106 final year nursing students and 7 nursing lecturers in the science of paediatric sputum induction.

The composition of health care workers trained over the last 12 months may be summarized as follows:

• Nurses	132
• Auxiliary Nurses	52
• Doctors	14
• Physiotherapy	4
• Nursing Lecturers	7
• Final Year Nursing Students	74



Now, for the first time in Botswana, we are able to successfully obtain sputum samples from children as young as two months for AFB staining and culture. As a consequence to this, we have been able to diagnose cases of multi-drug resistant TB in young children which would likely not have been diagnosed without our program.

iii) Development of Information, Education and Communication Materials

Also under the guidance of the Botswana National TB Program (BNTP), the COE has designed Information, Education and Communication (IEC) materials targeting parents of children with HIV/TB disease, as well as adolescents at high risk for HIV and TB infection. The materials are in the form of pamphlets written in both Setswana and English, as well posters. 15,000 pamphlets 1,200 posters have been produced, two-thirds of which have been donated to the BNTP for distribution to various health facilities around Botswana. The remaining one-third have been distributed by the COE at our Outreach sites. The aim of the IEC is to increase the level of awareness among members of the public about the critical nature of paediatric TB.



iv) Development of the Paediatric TB Diagnostic Algorithm

In collaboration with Botswana National TB Program, Botswana-UPenn Partnership and the University of Botswana School of Medicine's Paediatric Education Committee, the COE is in the process of developing an evidence-based national paediatric TB diagnostic algorithm. The initial draft of the algorithm is complete and by retrospectively analysing data collected during routine clinical sputum induction, the COE will produce clinical evidence for the final development of the algorithm, while also helping to determine the sensitivity and the specificity of the clinical characteristics of paediatric TB in Botswana's context.

SECTION 4-RESEARCH

4.1 Introduction

Research continues to be a central part of the COE's role in attempts to find innovative ways of treating children who are infected and affected by HIV/AIDS. There are several studies that have been conducted at the COE, but the most recent ongoing are the BANA-2 clinical trial, The “Voice” of the HIV Infected and Affected School Age Children in Botswana: A Cross-Sectional Psychosocial Survey, and the Nevirapine Extended Release studies.

4.2 BANA-2 TRIAL

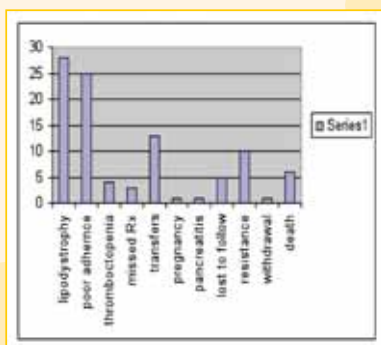
This study has been the largest trial running in the COE since February 2004, and came to an end in February 2010. The study recruited 771 HIV positive children and enrolled the targeted number of 600 children by July 2008, as required by the protocol. All of the patients that were still continuing with the study at the time of its completion (more than 500) were transitioned to the national ART programme in the PIDC for care and follow-up.

There were 96 patients who ended their participation in the study prior to end of trial due to various reasons, the most common being lipodystrophy (primarily due to stavudine) and poor adherence.

Data entry and cleaning is still continuing and data compilation is about to be completed. So far the longest period of treatment interruption was 6 years. The challenges faced include poor adherence due to multiple caregivers, especially for orphaned children and adolescents. Almost all BANA-2 trial staff are now engaged in the Voice study, a psychosocial study which recently began at the COE.

4.3 The “Voice” of the HIV Infected and Affected School Age Children in Botswana: A Cross-Sectional Psychosocial Survey

A Collaborative Study by the Ministry of Education, the Botswana-Baylor Children's Clinical Centre of Excellence and the World Bank



This table shows the various reasons which led to discontinuation of study patients prior to end of trial in February 2010.

people has proceeded without benefit of consultation with the children themselves. Ideally, policies and programs designed to aid children who are infected or affected by HIV should take into account the known and perceived needs of the intended beneficiaries.

The successful rollout of the antiretroviral program in Botswana the last several years has meant that fewer children are infected at birth while those already infected are living longer and surviving into adulthood. Consequently, an increasing number of HIV-infected children are expected to complete primary and secondary school in the coming years. It is not known whether the community at large or the school environment (teachers, policies, structures) is ready to provide the increasing number of surviving HIV-infected children with the supportive psychosocial environment that they need.

This survey is intended close this knowledge gap by obtaining information directly from HIV-infected and -affected children and supplementing this with information obtained from the children's caregivers and teachers. The study survey population will include 900 HIV-infected children, their guardians, 450 HIV-affected children, and over 2000 teachers. It is expected that the quantitative and qualitative information from those enrolled will shed new light on identifying specific new areas of need in general health, HIV/AIDS knowledge, outlook on life, emotional challenges and school services support system. In addition to these aims, we expect new and otherwise unknown information will likely emerge and assist in addressing the needs of the HIV child in Botswana and will guide us and other interested parties and informing future research. Data collection is ongoing at the COE and will be extended to the nine largest ART sites and 39 public and private schools in Botswana. Results of the study will be disseminated to stakeholders and the general public when available.

4.4 B.I. 1100.1518 NEVIRAPINE EXTENDED RELEASE (XR) TRIAL

An open-label, multiple dose, cross-over study to evaluate the steady-state pharmacokinetic parameters of Nevirapine extended release tablets in HIV-1 infected children, with an optional extension phase.

The aim of the study is to study pharmacokinetic (PK) parameters at steady-state of once-daily (QD) Nevirapine (NVP) extended release (XR) in children aged 3 to 17 years under fasting conditions. This is a multicenter study with sites in United States, Mexico, Argentina, South Africa, Botswana, Germany, Italy, United Kingdom, Romania and Russia. Botswana has 3 sites including the COE.

SECTION 5-EDUCATION

5.1 Introduction

Education, training and capacity building for paediatric HIV/AIDS treatment and care are major components of all COE programs. We believe that in sharing expertise with other health professionals around Botswana and the rest of Africa, we will eventually close the knowledge and skills gap that exists in paediatric HIV and eventually help children throughout the country and the region receive better care. Staff in the COE have, over the past year, participated in training activities within the COE, at ARV sites around the country and in other countries in Africa. Significant increases in paediatric coverage within the national program have been achieved by ongoing training programs such as Paediatric KITSO and School Staff Paediatric HIV/AIDS training. On the other hand, collaborative training with partners has expanded to include Continuing Medical Education (CMEs) for PMH interns; CMEs for private practitioners with I-TECH Botswana; training of community based providers with PCI-Botswana; mentoring and training of Namibian health care professionals with I-TECH Namibia; and Paediatric HIV/AIDS training in 5 South African provinces with EGPAF-South Africa. Over the past year, we have also seen an increase in numbers and cadres of scholars from Botswana, the region and abroad, who are interested in observing our programs. All these activities have given us an opportunity to strengthen our capacities in clinical mentorship, curriculum design and implementation, and training program management. We are thankful for the continued support of all our funders and partners who have made our training program a success story.

5.2 Paediatric KITSO HIV/AIDS Training Course

At the core of our Education program is the role that we undertake on behalf of the Ministry of Health and the Ministry of Local Government to train physicians, nurses and other health professionals in paediatric HIV/AIDS treatment and care. This maximizes the leverage of the COE's expertise by taking practical and classroom training to ART rollout sites across Botswana. This activity is made possible by support from PEPFAR through CDC/BOTUSA, UNICEF-Botswana, Ministry of Health and Ministry of Local Government.

Tailored to the needs of Botswana health professionals, the KITSO Baylor Paediatric HIV/AIDS training course provides much-needed training in paediatric HIV, improving paediatric care and treatment and increasing the numbers of children enrolled in the National ART program.

The Paediatric KITSO curriculum is designed to help healthcare providers become more comfortable recognizing, diagnosing and treating HIV-positive children and providing appropriate follow-up care. The course is conducted over the course of 5 days (one week). Conducting the training at the ART sites provides opportunity for trainees to have practical experience with children on treatment. Paediatric KITSO curriculum is revised periodically to accommodate changes in treatment guidelines and programs. The reviewers incorporate content that address feedback from course participants and also introduce more innovative and interactive teaching - learning situations. Over the last year, 17 Paediatric KITSO training courses were delivered in target sites, with 556 learners from hospitals and clinics attending the training. This makes a total of two thousand one hundred and fifty four (2154) healthcare workers trained through Paediatric KITSO program since it was initiated in July 2005. In collaboration with the Botswana Harvard Partnership (BHP), COE staff members continued to contribute to other aspects of the national KITSO Training program, including the paediatric components of the Advanced KITSO Course, the Medication Adherence Counseling Course, and the AIDS Clinical Care Fundamentals Course. During the coming year, the COE will continue its training activities at ARV sites aimed at increasing the number of health professionals who have the confidence and expertise to care for and treat children and adolescents with HIV. We plan to mobilize and increase the number of participants originating from DHTs and clinics. Paediatric KITSO training will collaborate with the COE Physicians' Outreach Program to come up with a post training support strategy to ensure that skills learned from the course are well utilized to improve identification, treatment and care of infected children. We will also explore more avenues for pre-service training.

i) The Need for KITSO Paediatric Training

The need for Paediatric KITSO training has continued to grow as facilities appreciate the fact that by expanding the pool of trained health care providers, we increase entry points for children into HIV treatment and care because



more providers are able to identify exposed and potentially infected children when routine healthcare is sought.

As well, clustering and training individuals from health facilities within the same area together leads to improved referrals and networking amongst the health institutions, hence better access to services by HIV infected children and their families.

Indeed, we are seeing the number of children enrolled on treatment at the various ART sites growing. We are confident that Paediatric KITSO and all other interventions that promote identification and treatment of infected children are bearing fruit. We are grateful for the role that the COE Physicians' Outreach Program has played in coming up with paediatric clinic days in many of the ART sites where they are operating, making it now much more simple to find cases for the Paediatric KITSO training practicum than when KITSO originated. Health managers have expressed the view that Paediatric KITSO content is a "must-know" for all health workers and have called for increased coverage by the training. There is also a call for a tailored course for other health cadres that have traditionally not been included in the trainings such as Family Welfare Educators and Auxiliary Health Workers and volunteers working in the IDCC. In 2010/2011 we aim to address some of these needs with expanded training options.

ii) Interest and Participation by Health Managers

Fortunately, health managers from both the DHT and hospitals are keen to participate and attend the training. This brings team spirit within the learning environment— but more importantly, during class discussions, managers hear for themselves the logistical constraints and other issues that are likely to affect provision of effective paediatric HIV/AIDS care within their areas of operation. We believe that equipped with such information, health managers are better able to appreciate the need to avail resources in terms of logistics, space and time so that their subordinates are able to utilise the skills and knowledge from the training. We are also hopeful that by health managers being involved at this level, they will minimise redeployment of staff to unrelated areas of operations after training.

iii) Blending of clinical management with psychosocial training

One thing that health workers appreciate about the Paediatric KITSO training is that it familiarises them with psychosocial issues in the care of children infected and affected by HIV. The course introduces principles of counseling and communicating with children, disclosure of HIV diagnosis to children, and other psychosocial support strategies such as Teen Clubs and children's camps. Many of the health workers appreciate that before coming to the training, they are focused with the physical needs of the HIV-positive child and social and emotional needs are largely overlooked. In training, we emphasise this integral role in providing and coordinating psychosocial support in conjunction with other professionals and community resources.

5.3 School Staff Training

The increasing need for a diversified and multifaceted care for HIV-infected and -affected children led the COE to focus attention on training school staff to enhance their capacity to provide a supportive environment and offer prevention education to school-going children and adolescents. Supported by a grant from the American Academy of Paediatrics' I-CATCH program, the Botswana-Baylor School Staff training is a collaboration with the Ministry of Education and Skills Development (MOESD). The project is a result of a realization that care for HIV-infected children could be maximized if major elements in a child's life (in this case family, school, and health care) are responsive to their needs and each element operates to enhance the other. The Training Project is three-phased and includes a pilot; a national psychosocial survey of school aged infected and affected children; and a national rollout phase.

Currently the workshops span two afternoons, with four hours each day devoted to lectures and question-and-answer sessions. The workshop coverage includes the spectrum of paediatric HIV; treatment and medications; infection control; nutritional care; rights/ethics/legal issues; psychosocial needs of HIV infected and affected children; HIV prevention messages for pupils, students and school staff; and teaching strategies for all content.

The pilot phase of the program started in 2006 and so far, nearly 1035 school staff at 29 schools have been trained. Participants of the training highly appraise the course content and its delivery. Post-training, many schools have helped expand the program's reach by conducting their own follow-up workshops for students and parents, supported by the COE's ongoing mentoring of school HIV/AIDS focal points. As well, the training has been extended to students in teacher training colleges. We look forward to a national rollout of this program which will be initiated by Government in the years ahead.

5.4 Sharing Knowledge

The highlight of the 2009-10 year for the Centre in terms of Sharing Knowledge was its very successful participation in the biannual International AIDS Conference, held this time (AIDS 2010) in Vienna, Austria. The Centre had 12 abstracts accepted to the HIV/AIDS world's most prestigious conference, most of any NGO partner in Botswana.

Drs. Andres Gomila and Premal Patel represented the Centre in Austria, along with Mr. Ed Pettitt. Links to the Centre's abstracts can be found on the International AIDS Society website at: www.ia-society.org. Following are the Centre's 12 abstracts:

Hepatitis B virus (HBV) prevalence in the outpatient adult HIV population at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana

S. Davis, P. Patel, M. Tolle, V. Mabikwa, G. Anabwani

Background: The prevalence of HBV co-infection in HIV-infected patients in sub-Saharan Africa is not clearly defined, including in Botswana. Prevalence results vary widely by study setting. For example, a study conducted in Botswana among adult HIV outpatients at a national tertiary healthcare facility found a 10.6% HBSAg prevalence, while a South African study showed 4.8% prevalence in an urban population. Despite substantial prevalence, routine HBV screening is not included in Botswana's national HIV treatment protocol. As effective antiretroviral (ARV) treatment options include the backbone of tenofovir-emtricitabine, a combination of ARVs also active against HBV, a diagnosis of HBV co-infection may affect optimal choice of ARV regimen. The objective of this study was to assess outpatient adult HBV coinfection prevalence in a cohort of patients at the BBCCCOE.

Methods: Retrospective review of records for the currently active patient population at the Family Medical Clinic (FMC) at BBCCCOE, where patients ages 18-80 are treated for HIV infection and were systematically screened for a variety of coinfections between 2005 and 2009, including HBV (as defined by a positive HBsAg result; n=250).

Results: HBSAg prevalence in the population studied was 4.8% (12/250) with a trend showing an increase from 1.9% for those screened in 2005 to 8.3% for those screened in 2007. This increase was statistically significant by chi-square ($p < 0.005$).

Conclusions: HBV co-infection is reasonably common in the adult patient cohort at the BBCCCOE. As other regional studies have shown up to 10-fold higher hepatitis B prevalence in rural versus urban populations, our urban-setting results may significantly underestimate total HBV co-infection prevalence in Botswana. More data from other patient populations is needed. Given substantial prevalence, HBSAg screening of HIV-infected patients for HBV deserves consideration in Botswana as well as other countries whose available antiretroviral combinations include those active against HBV, such as tenofovir-emtricitabine.

Hepatitis C prevalence in the adult HIV population at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana

P. Patel, S. Davis, M. Tolle, V. Mabikwa, G. Anabwani

Background: Co-infection with HIV and hepatitis C virus (HCV) presents a dilemma in the resource-limited setting. Decisions to implement HCV screening in an HIV-infected population largely rely on limited prevalence data and the availability of treatment options. Existing prevalence data shows great variation within Africa. While overall prevalence in Africa continent-wide has been estimated at between 5 and 6%, this reflects higher prevalence in North Africa, with rates in sub-Saharan Africa estimated at approximately 3.0% and lower, and between 1 and 2% in southern Africa. In Botswana, data is quite limited, with one published outpatient study reviewing 50 HIV-infected patients finding a 0% HCV prevalence. Routine HCV screening is not included in Botswana's national HIV treatment protocols, nor is effective treatment for hepatitis C widely available in the country. The objective of this study was to add to the HCV-HIV co-infection prevalence data available from Botswana.

Methods: Retrospective review of records for the active patient population at the Family Medical Clinic (FMC) at BBCCCOE, where patients ages 18-80 are treated for HIV infection and were systematically screened for a variety of co-infections between 2005 and 2009, including HCV by HCV antibody testing (n=235).

Results: HCV prevalence in the population studied was 0.9% (2/235). No upward or downward trends from year-to-year were noted. No patients with HCV-HIV co-infection were found to be further co-infected with hepatitis B.

Conclusions: Our results support previously reported findings of low prevalence in Botswana and the southern African region. In the setting of low prevalence and lack of effective treatment options, routine screening for Hepatitis C in HIV-infected patients does not appear to be warranted in Botswana.

Nucleoside- and non-nucleoside reverse transcriptase inhibitor (NRTI and NNRTI) resistance mutations in paediatric and adolescent patients failing first-line antiretroviral therapy (ART) at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCOE) in Gaborone, Botswana

A. Gomila, M. Tolle, L. Howard, B. Kirk, H. Schwarzwald, G. Anabwani

Background: There is little available data on patterns of resistance mutations in paediatric and adolescent patients in southern Africa, where HIV-1 subtype C (HIV-1C) predominates. In Botswana's national ART program, when ART resistance is suspected, first-to-second-line switch is made empirically; genotypic resistance assay (RA) has been recommended for second-line regimen failures since 2008.

Methods: Chart review. NRTI- and NNRTI-associated resistance mutations quantified from RA results (n=45; range: 5-17yrs, median 9.5yrs), taken at time of first-line ART failure (for all patients, first-line ART=d4T or AZT+3TC+NVP or EFV).

Results:

NNRTI mutations: M184V-41; Thymidine-analogue mutations (TAMs)-20. >1 TAM-9; TAM-2 pathway-10; TAM-1 pathway-7; hybrid pathway-3. K65R-2, Q151M-1, L74V-0.

NNRTI mutations: Associated with notable resistance to either/both NVP and EFV-40 (K103N-15). >=1 mutations associated with etravirine (ETV) failure (K101E, Y181C, G190A)-20. >=2 notable NNRTI mutations-12. Both M184V+notable NNRTI mutation-39. Neither M184V nor notable NNRTI mutation-0.

Conclusions: All patients in this cohort had clinically-significant resistance mutations, suggesting proper exclusion of non-resistance causes of failure prior to ordering RA. Not surprisingly, low-genetic barrier mutations (M184V, K103N, other NNRTI-associated) are common, as are TAMs, including more than one TAM. As the presence of multiple TAMs predicts wider NRTI resistance, a potential role for RAs in decision-making regarding switching to second-line therapy is suggested. The TAM-1/2 hybrid pathways seen in 3 patients reinforce the suggestion that HIV-1C may yield unique patterns of resistance distinct other HIV-1 subtypes; the clinical significance of this requires more study. The high frequency of multiple NNRTI mutations likely reflects delayed switch from first- to second-line, and is concerning. Prompt discontinuation of failing regimens is essential to preserving future treatment options, such as ETV. Mutations compromising non-thymidine analogue backbones (containing TDF, ABC or ddI) were rare or non-existent, suggesting empiric change of AZT- or d4T-containing first-line ART regimens should be to non-thymidine analogue-containing NRTI backbones.

HIV-associated cytopenia in pediatric HIV patients

P. Mehta, A. Gomila, G. Anabwani

Background: The occurrence of HIV-related cytopenia is known, however, there remain questions regarding the clinical significance, prognosis, and appropriate management of these conditions in children. Past studies have included small numbers of cases or series of children, or a combination of databases from settings that vary widely. Single cytopenias have been evaluated, or cytopenias have been included in a number of observations as a secondary aim. To better inform the literature, a comprehensive, focused evaluation is needed. This study describes the epidemiology and natural history of HIV-related cytopenia at the Botswana-Baylor COE.

Methods: A retrospective chart review was conducted. Data were collected on absolute CD4 count, CD4%, VL, Hg, MCV, ANC, Platelet Count. Three data points were collected: pre-HAART, post-initiation, and most recent as of December 2008. Descriptive statistics were evaluated using Excel.

Results: 432 charts were reviewed. 361 (84%) contained all data points required. Anemia (Hg < 12 g/dL) prevalence-58% pre-initiation decreasing to 47%, severe anemia (Hg < 7 g/dL)-1.5% pre-HAART decreasing to 0.33%. Neutropenia (ANC < 1500)-21.5% pre-HAART and increased to 30.0%. Severe neutropenia (ANC < 500) was rare, no patients initially and increasing to 2%. Moderate neutropenia (ANC 500-1000)-10.7% pre-HAART and decreased to 9.6%. Thrombocytopenia (< 150,000/mm³)-2.9% pre-HAART and decreased to 0.99%. Severe thrombocytopenia (< 50,000/mm³)-1.4% pre-HAART, decreased to 0.99%. All patients with severe thrombocytopenia pre-HAART corrected to normal. Mean Hg: 11.57 g/dL pre-HAART to 12.19 g/dL (p=0.006), MCV: 91.7 fL pre-HAART to 98.1 fL (p<0.0001). Mean ANC (p=0.087) and Plt count (p=0.42) did not change and remained normal.

Conclusions: Anemia is the most prevalent HIV-related cytopenia although severe anemia is rare. Both improved with appropriate therapy, including HAART and iron therapy. Neutropenia is not uncommon and appears to not be affected by HAART significantly. Thrombocytopenia is rare and appears to resolve with HAART.

Prevalence of HIV-1 seronegativity (or an indeterminate Western blot result) in children with proven perinatal HIV infection on HAART at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCOE)

T. Marukutira, R. Seleke, A. Sathyamoorthi, K. Mathuba, O. Tshume, T. Masutlha, G. Monyatsi, K. Sichone, T. Dipotso, M. Tolle, G. Anabwani

Background: Treatment with HAART during chronic HIV infection in children efficiently reduces the plasma HIV-RNA to undetectable levels but does not eradicate infection. Early initiation of HAART in infants may modify the natural course of primary infection by controlling HIV replication at undetectable levels. Seroreversion has been documented in perinatally exposed infants with maternal antibodies before the disappearance of antibodies at 18 months. Treatment seroreversion is rare and does not mean HIV eradication. The following study investigates the prevalence of seroreversion in a cohort of patients undergoing a drug pharmacokinetic study.

Methods: The western blot test was performed in a sample of 48 HIV infected children who were receiving HAART for proven HIV infection participating in a pharmacokinetic study. Indeterminate results were repeated for confirmation.

Results: 3 patients tested negative, while 5 had indeterminate results, giving a prevalence of 16.7% negative/indeterminate western blot results. All patients had started HAART within their first year of life and all patients were on HAART at the time of western blot testing (ranging 2-6 years). Perinatal HIV infection had previously been confirmed by a DNA PCR for all patients. At the time of HIV diagnosis, all patients had high viral loads (>750 000copies/ml) and significant immunosuppression.

Conclusions: In this cohort, seroreversion on treatment has been shown to be reasonably common, assuming baseline western blots were positive. Patients asking to be retested for HIV with an antibody test while on HAART should be counselled that negative test results do not equate with the absence of HIV infection. Further research is required to explore the range of seroreversion occurrence in larger cohorts of individuals.

Outcomes of non-nucleoside reverse transcriptase inhibitor (NNRTI)- and protease inhibitor (PI)- based antiretroviral therapy (ART) regimens among HIV/TB co-infected children concomitantly treated with rifampicin at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE)

A. Gomila, M. Tolle, G. Tafaune, A. Sathyamoorthi, G. Anabwani

Background: Circulating levels of NNRTIs and PIs may be reduced by co-administration of rifampicin, a key anti-tuberculosis therapy (ATT) component. WHO recommends NNRTI-based regimens as first-line pediatric ART and PI-based regimens for children failing first-line. Limited data exist regarding efficacy and toxicity of NNRTI- and PI-based regimens among HIV-infected children receiving rifampicin. Botswana HIV/AIDS National Pediatric Guidelines recommend continuation of NVP or EFV for patients on NNRTI-based regimens who develop active TB infection; no NNRTI dose adjustment when first-line ART is initiated in patients on ATT; and doubling of LPV/r dose when taken with rifampicin. Clinical, virological and toxicity outcomes for a cohort of HIV/TB co-infected children administered rifampicin with NVP, EFV or LPV/r are of interest.

Methods: Retrospective chart review. Inclusion criteria-age < 19y, HIV-infected, on concomitantly-administered NNRTI- or PI-based ART plus rifampicin-containing ATT between February 2008-July 2009 at BBCCCOE.

Data collected-age, adherence to ART, clinical and virological outcomes (new OIs, poor growth, VL at end of ATT), drugs used and hepatotoxicity (ALT/AST/BB>3 times ULN).

Results: 65 patients received ATT/ART, including 5 (7.7%) MDR-TB patients excluded from the analysis. 36.7%(22/60) received NVP, 35%(21/60) EFV and 28.3%(17/60) LPV/r. Mean age-8.4 years (range 6 months-19 years). 23 males, 37 females. No deaths registered. All patients completed ATT. No clinical outcome differences between groups. Virologically, 3 patients had detectable VL (>400) at completion of ATT-2 from LPV/r group; 1 from NVP group; all with noted poor adherence. 3 patients developed hepatotoxicity- 1 from NVP group, 2 from EFV group; none required discontinuation for toxicity.

Conclusions: Although limited by small sample size, in this cohort no substantial differences in clinical and virological outcomes were noted between HIV/TB co-infected pediatric patients receiving rifampicin with either NNRTI- or PI-based ART. Non-optimal virological response (detectable VL) was only seen in patients with noted non-adherence to ART. Hepatotoxicity (subclinical) was an uncommon event.

Characteristics of patients on second-line antiretroviral therapy (ART) at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE)

B. Kirk, L. Howard, M. Tolle, A. Gomila, V. Mabikwa, G. Anabwani

Background: The Botswana National HIV/AIDS Treatment Guidelines outline indications for HAART initiation, first and second-line regimens, and empiric management of first-line virological failure. Opened in 2003, the BBCCCOE is Botswana's largest paediatric HIV treatment centre, with >1,800 patients on ART. Both at BBCCCOE and elsewhere in Botswana's national ART program, virological failure is the most common reason for switch from first- to second-line ART. Data regarding children failing first-line ART are of interest.

Methods: Chart review of all patients age < 19yrs currently on second-line ART, all of whom had been initiated on NNRTI-based ART. Data reviewed: age at second-line initiation; gender; time from first-line initiation to virological failure; and time from virological failure to switch to second-line ART.

Results: 157 patients (57%-male,43%-female) on second-line ART had documented date of first-line initiation and date of switch to second-line. Mean age at second-line initiation-6.5 years. 46 (29%) were either suspended or defaulted from first-line therapy at line change. Date of virological failure or failure to suppress with first-line regimen was documented in 118/157 patients. 35 (30%) failed to virologically suppress, and among those with documented return of detectable viral load (VL>400) after reaching undetectable status (n=83), mean time from initiation of first-line ART to virological failure=20.3 months. Mean time from virological failure to initiation of second-line therapy=11.6 months for patients who were suspended or defaulted prior to switching (n=25) and 6.4 months for patients who had never ceased first-line ART (n=59).

Conclusions: A substantial number of children failed first-line HAART less than two years after initiation. Mean time from virological failure to change of therapy may not be optimal. These data need continued tracking with the advent of LPV/r-based first-line ART for most newly-infected infants, in whose cohort it may differ. Response of both cohorts to second-line ART should be studied.

Prevention of mother-to-child transmission of HIV infection (PMTCT) at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana: 2009 cohort

M. Tolle, A. Gomila, T. Marukutira, V. Mabikwa, G. Anabwani

Background: The United Nations has called for universal PMTCT coverage (>/=80%) and an HIV-free generation by 2015. Botswana has achieved this target, and has seen a substantial reduction in the number of new infant infections. Yet there remain mothers who deliver infants without the benefit of PMTCT interventions. The BBCCCOE cares for, counsels and tests several hundred infants born to HIV-infected mothers annually. This study describes the BBCCCOE's 2009 PMTCT experience.

Methods: A review of the PMTCT coverage and infant HIV testing (DNA PCR) data from infants enrolled at the BBCCCOE in 2009. PMTCT coverage=mother or infant having received any portion of Botswana's PMTCT approach (maternal-HAART for mothers with WHO stage III/IV or CD4 < 250, otherwise AZT from 28 weeks+sd-NVP (if < 4weeks of AZT or HAART); infant: sd-NVP+4 weeks AZT).

Results: Of 384 infants with known PMTCT status, 322 (83.9%) had received PMTCT, 62 (16.1%) had not. 216 PMTCT-receiving had a known DNA PCR result: 193-negative (89.4%), 23-positive (10.6%). 43 PMTCT non-recipients had a known DNA PCR result: 13-negative (30.2%), 30-positive (69.8%). Whether infants had been exposed to breast milk was not recorded in the reviewed data.

Conclusions: While the patient cohort at the BBCCCOE may be non-representative of Botswana in general, the BBCCCOE cohort's high rate of PMTCT coverage is consistent with Botswana's high national rate. Infants who have received PMTCT are much less likely to acquire HIV. Yet even within the cohort of infants receiving PMTCT, there remains an appreciable HIV infection rate, much higher than < 2% achievable with a full package of PMTCT interventions, including HAART for all HIV-infected pregnant women - an approach now being piloted in Botswana. Eliminating missed opportunities for PMTCT, and ensuring the most effective PMTCT strategies are universally available, will help Botswana achieve even lower rates of perinatal HIV transmission.



The Family Medical Clinic (FMC) at the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana - a model of care

P. Patel, S. Davis, M. Tolle, G. Anabwani

Issues: Paediatric HIV in sub-Saharan Africa is a family concern. The vast majority of paediatric cases are due to vertical transmission, and the implications of having parents, and often other family members, infected are profound. The same caregivers who must present children for testing, administer daily medications, and serve as role models for positive living are themselves often ill. When a caregiver dies, a child's survival odds diminish and risk of impoverishment increases, and a child's quality of life, social support, education, mental health and development, and nutritional status may become threatened. The FMC serves to deliver high-quality preventive care and management of HIV infection for adult caregivers alongside their HIV-infected children at the BBCCCOE.

Description: Recognizing that healthy adults are critical to the survival of HIV-infected children, the FMC is a unique element of the care offered at the BBCCCOE, in which adult-trained specialists and medical officers utilize a family-centered approach to paediatric HIV care in providing preventive care as well as HIV management. HIV-infected adult caregivers of BBCCCOE paediatric patients are enrolled into the FMC based on inclusion criteria

favoring the medically/socially-complicated or newly diagnosed.

Lessons learned: Adults and children are seen on the same day, often together, leading to more effective care communication and coordination. Issues surrounding disclosure, stigma, and social support are addressed by a multidisciplinary team composed of medical, nursing, social work and nutrition specialists. The reduction in number of total clinical visits required by adult caregivers offered by the FMC model results in fewer days of missed work, lower transportation costs, and improved patient satisfaction.

Next steps: The services offered in FMC will be based on a defined package of primary care services aligned with a rigorous set of preventive care guidelines based on developing world- and Botswana-specific causes of adult morbidity and mortality.

The Extended Physician Outreach Project from the Botswana-Baylor Children's Clinical Centre of Excellence (BBCCCOE)

G. Workneh, M. Tolle, N. Gaetsewe, B. Thuto, R. Seleke, H. Jibril, G. Anabwani

Issues: There have been remarkable advances in the expansion of paediatric HIV care in Botswana, with almost 8,000 children under the age of 12 years on antiretroviral therapy (ART). As the largest paediatric HIV care and treatment clinic in the country, the BBCCCOE in Gaborone provides comprehensive family-centered HIV care to more than 2,000 children. In February 2008, the BBCCCOE embarked on an Extended Physician Outreach Project, funded by Texas Children's Hospital, to assist decentralization and scale-up of the care and treatment of HIV-infected children. The project's objectives are to help build capacity for comprehensive provision of paediatric HIV care in decentralized health institutions across Botswana; support preventive services; and facilitate the national goal of universal access to HIV care.

Description: BBCCCOE physicians (including faculty, members of the Pediatric AIDS Corps and medical officers) and an outreach nurse conduct monthly support visits to decentralized ART sites. These visits consist of didactic sessions along with side-by-side clinical mentorship. BBCCCOE staff remain available to sites for guidance on a longitudinal basis, both during direct visits and via a specialist cell phone answered around-the-clock by BBCCCOE faculty.

Lessons learned: Since its inception, the project has grown to sustain 28 sites with an average of 257 mentored patient visits monthly, and a total outreach site paediatric enrolment of more than 2,000 HIV-infected children.

Next steps: The Extended Physician Outreach Project plays an important role in supporting Botswana's national scale-up of decentralized paediatric HIV services. Strategically, the project endeavors to assure quality improvements, as well as ensure its continued presence in outreach sites. Near-term plans include implementing an adaptable monitoring and evaluation framework that will measure the effectiveness of defined outcome indicators for capacity building, as well as exploring operational methods that support and strengthen sites' sustainability as paediatric-capable ART centres.

Expanding mentoring services to local clinics in the Serowe/Palapye region of Botswana

L. Scherzer, M. Tolle, N. Gaetsewe, B. Thuto, H. Jibril, G. Anabwani

Issues: While the scale-up of antiretroviral therapy (ART) programs has been broadly realized in Botswana, children and rural populations persist as challenges to the goal of universal access to HIV care. Barriers to access for these populations include limited numbers of healthcare providers; lack of provider comfort with paediatric care; and centralization of services. The Serowe/Palapye region (including the villages of Serowe, Palapye and environs; population 153,035, HIV prevalence 20%) is a rural setting, where HIV care services and accompanying mentoring have been centralized, and paediatric services, in particular, are few (children = 9% of antiretroviral therapy (ART) patients; national target = 15%). Clinical mentoring has been shown effective in supporting scale-up of HIV care in such settings, including at local clinics, where most health services are delivered.

Description: The Botswana-Baylor Children's Clinical Centre of Excellence (Baylor) clinical mentoring program has been active at Serowe's district hospital since 2007. In September 2009, a member of Baylor's Pediatric AIDS Corps moved to Serowe to initiate mentoring services at the region's local clinics. Six local clinics are visited monthly and medical officers, nurses, nurse prescribers, and lay counselors are trained in pill counting, disclosure, clinical staging, assessment of growth and development, and paediatric ART management. Through December 2009, there have been 446 mentored paediatric and adult visits and 19 mentored providers.

Lessons learned: The presence of a full-time mentor in Serowe has allowed Baylor to, in a short time, expand its presence in the Serowe/Palapye region from a single centralized site to local clinics.

Next steps: Developing task-shifted capacity amongst nurse prescribers will be a focus of ongoing work. Also, specific indicators of mentoring impact will be tracked at mentored sites, including the paediatric proportion of ART patients. Further, additional local clinics' suitability as ART sites will be assessed.



Teen Talk (Botswana Edition): a question and answer guide for HIV-positive adolescents

J. Rosebush, E. Pettitt, A. Offorjebe, N. Boitumelo, H. Jibril, G. Anabwani

Issues: More than 3,000 adolescents will be receiving antiretroviral (ARV) medications in Botswana by the 2011. Adolescence is associated with emotional turbulence, an inability to maintain responsibility for personal well-being, and difficulty internalizing and processing abstract concepts. Furthermore, there is a lack of accurate, holistic and youth-friendly informational materials available to HIV-positive adolescents on how to live a healthy life.

Description: The Botswana edition of Teen Talk, a question and answer guide for HIV-positive adolescents, was adapted from the original version published in the United States in 2004 by Weiner and Wood. Adaptation involved participation from 2 local doctors, 1 psychologist, 1 social worker, 2 lay volunteers and 10 adolescent peer educators. The US version contained 4 sections with 37 questions compared to the Botswana edition with 14 sections and 84 questions. Sections on sex (18*), emotions (13), friendship

(5), and future planning (2) were edited for cultural relevancy. In line with Ministry of Health priorities in Botswana, sections on Safe Male Circumcision (4), Positive Prevention (7), Multiple Concurrent Partnerships (2), and Prevention of Mother to Child Transmission (3) were added. A greater emphasis was put on sections pertaining to HIV (3), ARVs (6), adherence (4), disclosure (6), nutrition (6) and exercise (5). The guide has been translated into Setswana and a list of local sources for further information was included. *Number of questions in section.

Lessons learned: Adolescents living with HIV require information about healthy decision-making and how it relates to their infection in order to live positively and avoid treatment failure. Feedback from adolescents involved in the adaptation phase of Teen Talk material development has been overwhelmingly positive regarding its potential as an information resource.

Next steps: Next steps include pre-testing the Teen Talk guide in 6 ARV sites throughout Botswana and incorporating feedback for national rollout.

As well as its participation in AIDS 2010, the COE enjoyed robust participation in the 12th BIPAI Network Meeting held in Benghazi, Libya in March 2010. Many of the above abstracts were also presented, along with several others; a number of oral presentations were also given by COE staff.

5.5 The COE Visiting Scholars Programme

Each month medical students, residents and fellows from various training programs around the globe visit the COE as visiting scholars. The rotation allows them to learn about paediatric HIV in a resource-limited setting. Led by our group of Pediatric AIDS Corps physicians, in 2009-10, the program was redesigned to provide more structured education. Visiting Scholars spend most of their time working in the COE. Residents and fellows are allowed to see patients independently, after a period of shadowing experienced providers, precepting each patient with a specialist. Visiting Scholars are now given a series of 4 lectures (a condensed version of the week long Paediatric KITSO training) during their rotation. They are each asked to present an article at Journal Club and students are asked to complete a small project, such as helping with research studies and case reports or creating pamphlets on various topics for patients. Each Visiting Scholar is also afforded a few opportunities to participate in the Outreach program by visiting various local clinics with the outreach team. Lastly, visiting scholars are able to spend time on the paediatric heme/onc service in the Princess Marina Hospital. Reviews from recent Visiting Scholars of their experiences have been very positive.



SECTION 6-ADMINISTRATION

The COE is governed by a Memorandum of Agreement between the Baylor College of Medicine International Pediatric AIDS Initiative and the Government of Botswana, and is legally registered in Botswana as a Trust - the Botswana Baylor Children's Clinical Centre of Excellence Trust (MA 319/2003), first registered in December 2003. The trust, whose Board of Trustees is appointed by the Baylor College of Medicine, provides a financial and organizational structure for the management, operation and oversight of the COE. The Executive Director of the COE is appointed by the Board of Trustees and he/she functions as CEO.

6.1 The Board

The Board of the Botswana - Baylor Children's Clinical Centre of Excellence (COE) is appointed by Baylor College of Medicine. The Board is responsible for shaping the strategic direction of the COE by ensuring that the Centre operates effectively and achieves its agreed strategic objectives.

The members of the Board of Directors of the COE are as follows:

- | | |
|---------------------------|--------------------|
| 1. Prof. Mark Kline | Chairman |
| 2. Mr. Michael Mizwa | Deputy Chairman |
| 3. Prof. Gabriel Anabwani | Executive Director |
| 4. Mr. Joseph Kanewske | Treasurer |
| 5. Ms. Nancy Calles | Member |



6.2 The Management Committee

The Management Committee reports to the Board of Directors and it is responsible for implementing the strategy of the COE in order to achieve its stability and growth.

The Senior Management of the COE is as follows:

- | | | |
|----|----------------------------|----------------------------------|
| 1. | Prof. Gabriel Anabwani | Executive Director |
| 2. | Mrs. Olekantse Molatlhegi | Finance & Administrative Manager |
| 3. | Mrs. Mmapula Sechele | Nurse Manager |
| 4. | Dr. Haruna Jibril | Ministry of Health, Botswana |
| 5. | Dr. Michael Tolle | Associate Director |
| 6. | Mrs. Kgomotso Gini Moruisi | Princess Marina Hospital |



6.3 Community Advisory Board



With a view to increase local participation and input in the activities, programs and strategic direction of the COE, it was decided towards the end of 2009 to set up the Community Advisory Board (CAB). The members of the CAB are as follows:

Dr. G.K. T. Chiepe - Chairperson

Dr. Chiepe retired from the Civil Service and joined politics. She was the first Motswana woman to be a Member of Parliament and Cabinet Minister from 1974 - 1999. She served in different Ministries. She is also a member of various civil society organizations.

Bishop Trevor Mwamba - Member

Bishop Trevor Mwamba is currently the Bishop of Anglican Church in Botswana. He trained for the priesthood at Saint Stephen's House, Oxford, and was ordained in 1984 at Saint Luke's Chelsea in London and served his curacy in the Parish of All Saints, Notting Hill before returning to Zambia where he was priested in Ndola in 1985. As Rector of Luanshya, Bishop Mwamba also assumed the responsibilities of Vocational Director for the Diocese of Central Zambia.



Mrs. Alice Mogwe - Member

Ms. Mogwe is the founder Director of The Botswana Centre for Human Rights (DITSHWANELO). She also represents DITSHWANELO on a number of Boards, Councils, and reference groups, locally, regionally and internationally.

Ms Kesego Basha-Mupeli - Member

Ms. Basha-Mupeli is the founder Director of Centre for Youth of Hope (CEYOHO).



6.4 Visitors to the COE

In the past year, we have had the opportunity to host several guests nationally and internationally who wanted to have a better understanding of the programmes of the COE and how we are implementing them. All of our visitors were greatly impressed by the work that the COE does. Among our guests were the following:

- Canada-Africa Parliamentary Association delegation
- Wife of the General in charge of Africa Command (U.S. Military)
- US Ambassador
- US Military Escort
- CDC-BOTUSA
- Hon. Deepak Obhrai - Parliamentary Secretary to the Minister of Foreign Affairs of Canada accompanied by Her Excellency, Ms Barbara Richardson, High Commissioner of Canada to Botswana

6.5 COE Workforce

The COE prides itself on the dedicated staff that it has, all of whom are passionate about the welfare of children. The workforce is comprised of staff directly employed by the COE, specialists seconded from the Baylor College of Medicine and health professionals seconded from the Ministry of Health and Princess Marina Hospital, totaling to 78. The staff seconded from these institutions has had a great impact on our operations, making it possible for us to provide quality services to the children and their families.

i) Pediatric AIDS Corps (PAC)

The PAC program continues to be a key component of the COE's clinical and training programs. Currently comprised of six physicians based in Gaborone and one based in Francistown, the PAC physicians deliver clinical care at the COE and Outreach sites, as well as mentor and train HCPs at Outreach sites and through Paediatric KITSO courses. While the PAC program is scheduled to end in June 2011, the COE is looking forward to welcoming new physicians arriving to Botswana as part of the Texas Children's Hospital Global Health Service Corps (GHSC) in July 2011. All are pleased to see the strong tradition of the PAC in Botswana continue through the GHSC, and are excited about the GHSC's expanded mandate to include malaria, TB and child survival interventions in its work alongside its core work in paediatric HIV.

ii) Volunteers/Interns

The COE has a diverse group of volunteers who are essential to the operation of the Centre. Our volunteers come from all corners of the world - currently, the COE is hosting long-term volunteers from Canada (through World University Service of Canada), Germany (through the Weltwärts Program at the German Development Service) and the United States (through Princeton University's "Princeton In Africa" Fellowship and the U.S. Peace Corps). There are also many local Botswana who work tirelessly to ensure the smooth running of programs like Morning Play Group. The COE also maintains a partnership with the University of Botswana, and receives interns in the fields of Social Work and Psychology.


The COE is comprised of the following staff:	Below is a list of the COE Pediatric Aids Corps (PAC) Doctors:
<ul style="list-style-type: none"> • Doctors 17 • Nurses 17 • Finance & Administration 14 • Data Personnel 7 • Research Assistants 4 • Medical Auxiliaries 3 • In-reach/Outreach Staff 8 • Training Coordinator 1 • Social Worker 2 • Lab Technician 1 • Translators 2 • Clinical Psychologist 1 • Dietician 1 	<ul style="list-style-type: none"> • Kimberly Slusser Paediatrician • Parth Mehta Paediatrician • Gelane Workneh Paediatrician • Brianna Kirk Paediatrician • Leah Scherzer Paediatrician • Premal Patel Paediatrician • Andres Gomila Paediatrician <p>Departed PAC Doctors:</p> <ul style="list-style-type: none"> • Julia Rosebush Paediatrician • Stephanie Davis Paediatrician • Leigh Howard Paediatrician

Following the expansion of the activities of the COE, the following staff members have been hired;

- | | |
|-------------------------|-----------------------|
| 1. Sefiso Malanga | Front Desk Officer |
| 2. Ntebogang Modibedi | Records Officer |
| 3. Katlego Koboto | Peer Educator |
| 4. Onkemetse Phoi | Clinical Psychologist |
| 5. Mmoloki Chris Mosweu | Project Assistant |
| 6. Matildah Engleton | Project Officer |
| 7. Gopolang Mositwane | Admin Officer |
| 8. James Maidza | Pharmacy Technician |

However, we had the following staff members leaving the COE for various reasons;

- | | |
|------------------------------|-----------------------------------|
| 1. Togara M. Pamacheche | Medical Officer |
| 2. Lindsay Spencer | Clinical Psychologist |
| 3. Dr. Refilwe Sello | Medical Officer |
| 4. Ms. Pona Selotate | Administrative Manager |
| 5. Masego Pule | Admin Assistant |
| 6. Dr. Geoffrey Tafaune | Medical Officer |
| 7. Mr. Keabetswe Ramathekete | Data Clerk |
| 8. Ms. Gaolape Selolwane | Outreach Nurse |
| 9. Edward Pettitt | Fundraising/Teen Club Coordinator |



We are currently organising a staff retreat that is aimed at empowering members of staff on areas such as communication, trust, stress and anger management techniques, team work and analysis of change/development.

6.6 Capacity Building

i) Training of Botswana Physicians

At the end of 2009, the COE had sent a total of five Botswana physicians to advanced studies related to paediatric HIV/AIDS. They are still continuing their training except Refilwe Sello, who will complete her studies by end of 2010.

Dr. Dipesalema Joel is also participating in a Paediatric Endocrinology fellowship program in Kenya.

6.7 Monitoring and Evaluation

The Monitoring and Evaluation (M&E) department of the COE is responsible for tracking performance and providing evidence of achievement of results that guide organizational learning in clinical and non-clinical activities.

The 2009-10 COE activities are outlined in the Balanced Score Card (BSC). The M&E department uses this tool to assess whether its objectives and goals are met. There are four perspectives evaluated in the BSC: Partner Satisfaction, Operational Excellence, Employee and Organizational Development and Financial Health.

The reporting of achievements to Houston and our donors based on these perspectives is done on a monthly, quarterly and annual basis. The COE use electronic databases such as EMR, MEDITECH and Microsoft Access database to track its Operational activities. During the reporting periods, the data accrued from these databases is loaded in statistical packages such as SPSS and STATA for analysis and quality check. The COE data is also used for clinical and operational research.

6.8 Partnerships

The COE's mission and objectives would be impossible without the involvement of its valued partners. To this end, we strive to continuously improve our relationship with partners, involve them within our decision-making processes, and ensure their satisfaction. A pertinent example of this is our partners' involvement in our strategic review process. Our key partners include, but are not limited to, the following:

1. The Government of Botswana, including
 - i. Ministry of Health
 - ii. Ministry of Education Skills & Development
 - iii. Ministry of Local Government - Social Services Department
2. CDC-BOTUSA
3. UNICEF
4. NACA
5. U.S. Embassy

Through the expansion of activities within the Teen Club, the COE has continued its partnerships with community based organizations. They include the following:

1. **Francistown:** Light & Courage Centre Trust, Nyangabgwe Referral Hospital (formed October 2008)
2. **Molepolole:** Hope Worldwide Botswana, Scottish Livingstone Hospital (formed November 2008)
3. **Mochudi:** Stepping Stones International, Deborah Retief Memorial Hospital (formed September 2008)
4. **Mahalapye:** Mothers' Union Orphan Care Centre, Mahalapye District Hospital (formed May 2009)
5. **Maun:** Bana Ba Letsatsi, Letsholathebe District Hospital (formed November 2009)

6.9 Information Services and Infrastructure Maintenance

We continue to enjoy the benefit of a superb facility, which enables us to deliver a quality of care equivalent to the best in the world. At the same time, we must ensure that the facilities and technology are meeting both present and

expected future needs.

- The EMR (Electronic Medical Records) continues to be a strong reporting tool in keeping track of Patient records and adherence.
- The COE's Information Systems continue to meet current and future demands with respect to Information retrieval within the Botswana COE's Network and the Internet.
- COE Infrastructure continues to be maintained by competent service providers. Furniture and medical equipment have been serviced or replaced to ensure standards are maintained.

6.10 Finance

i) Introduction

We are delighted to announce that our 2009-10 accounts have been prepared and audited well in time. Deloitte was engaged to do the COE accounts audit, and there were no major weaknesses identified during the audit process.

Our funding sources continue to grow gradually as programs increase in size and number, and the hiring of a fundraising coordinator has contributed towards expanding these sources. The audited financial statements of the COE are attached to reflect our current financial position as compared with last year.

ii) Our financial supporters

Donor	Amount (BWP)	Amount (USD)	Activities
Government of Botswana	5 850 000	750 000	Core Expenses
CDC/BOTUSA	2 300 000	330 000	TB Programme, Treatment, Care and Support
Texas Children's Hospital	1 900 000	280 000	In-reach/Outreach
NACA	600 000	86 000	Reducing Multiple Concurrent Partnerships amongst HIV-positive Adolescents
UNICEF	600 000	85 000	Teen Club
Barclays Bank	378 000	54 000	Adolescent Support
BIPAI	374 000	53 000	Local PAC Expense Contribution
	In-kind	In-kind	PAC salaries and benefits
Canadian Embassy	88 604	12 500	Purchase of Adolescent Caravan
WUSC	48 000	7 000	Teen Club
American Academy of Pediatrics	13 000	2 000	Teacher Training

*Note: The conversions depicted are reflective of the exchange rates at the time of donation receipt.

iii) Donations

There are always those individuals and organizations that extend their hand to contribute to the well-being of the children. The COE has received monetary and non-monetary donations from the members of the community; indeed, this contributes to the Vision 2016 pillar, "A Compassionate Nation". Among the list we have the following:

- The Gaborone Gideons Camp -donated some bibles to staff and patients
- German Development Service (DED) - donated a car (Volkswagen Citi Chico)
- Mrs J. Allie - clothes for children and adults
- Mr. Jerry Makhanda (staff member) - Baby clothes
- Dr. M. Tshokonego (staff member)- adult and children clothes and shoes
- Dr. and Mrs. M. Tolle (Associate Director) - toddler clothes and children's books
- Dr. Julia Rosebush (PAC doctor) - clothes

The COE has received several donations for Teen Club from overseas donors through the Teen Club website. We have also received support from members of the public who have donated money, toys and valuable time to help our children.

We cannot forget those who care for the environment that we operate within, particularly Standard Chartered Bank Botswana, who planted trees at COE offices during World Environmental Day.

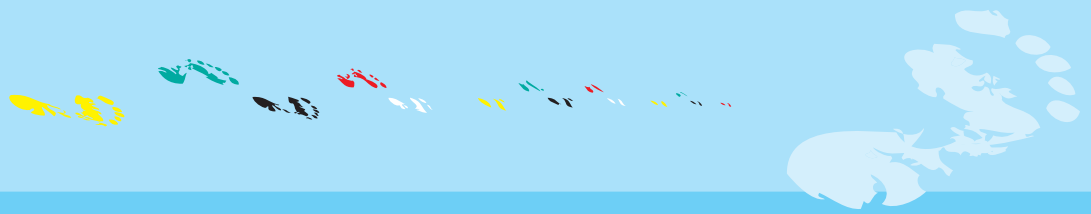
We cannot forget those who care for the environment that we operate within, particularly Standard Chartered Bank Botswana, who planted trees at COE offices during World Environmental Day.

AFH	AIDS Foundation Houston
ARV	Antiretroviral
BANA	Botswana-Baylor Antiretroviral Assessment
BMS	Bristol Myers-Squibb
BIPAI	Baylor College of Medicine International Pediatric AIDS Initiative
BONELA	Botswana Network on Ethics Law and HIV/AIDS
BOTEC	Botswana Technology Centre
BOTUSA	Botswana USA Project
CDC	Centre for Disease Control and Prevention
COE	Botswana-Baylor Children's Clinical Centre of Excellence
DED	Deutscher Entwicklungsdienst (German Development Service)
DSMB	Data Safety and Monitoring Board
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation
HAART	Highly Active Antiretroviral Treatment
IFC	Intensive Follow-Up Clinic
NACA	National AIDS Coordinating Agency
IPMS	Integrated Patient Management System
PAC	Pediatric AIDS Corps
PCI	Project Concern International
PIDC	Paediatric Infectious Disease Clinic
IDCC	(Adult) Infectious Disease Care Clinic
KITSO	Knowledge Innovation and Training Shall Overcome
PMH	Princess Marina Hospital
PMTCT	Prevention of Mother to Child Transmission
RDA	Recommended Daily Allowance
SMART	Strategies for Management of Antiretroviral Therapy
UNICEF	United Nations Children's Fund
UPENN	University of Pennsylvania



financial report





INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF BOTSWANA - BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE

Report on the Financial Statements

We have audited the accompanying financial statements of the Botswana - Baylor Children's Clinical Centre of Excellence, set out on pages 39 to 45, which comprise the statement of financial position as at 30 June 2010, and the statement of comprehensive income, statement of changes in funds and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory notes.

Directors' Responsibility for the Financial Statements

The directors are responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards.

This responsibility includes: designing, implementing and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly in all material respects the financial position of Botswana Baylor Children's Clinical Centre of Excellence as of 30 June 2010 and the results of its changes in funds and cash flows for the year then ended in accordance with International Financial Reporting Standards.

Other matter - supplementary information

Without qualifying our opinion, we draw attention to the fact that supplementary information set out on pages 33 to 35 does not form part of the annual financial statements and is presented as additional information. We have not audited these annexures and accordingly we do not express an opinion on them.

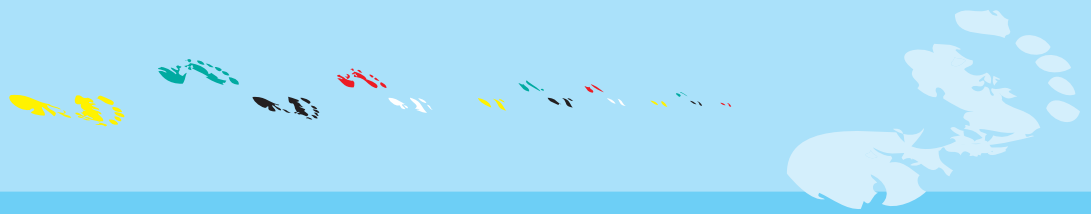
Deloitte & Touche

31 August 2010
Gaborone



BOTSWANA - BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE
STATEMENT OF COMPREHENSIVE INCOME
 for the year ended 30 June 2010

	<u>2010</u> P	<u>2009</u> P
INCOME		
Gross Income	7,237,390	9,033,949
EXPENSES		
Operating Expenses	<u>(7,090,487)</u>	<u>(9,493,518)</u>
Operating surplus/(deficit) for the year	146,903	(459,568)
Deficit for the year on KITSO Training Fund	(140,431)	(237,642)
(Deficit)/surplus for the year on BANA 2 Trial Fund	(2,264,312)	852,172
Deficit for the year on Outreach Fund	-	(180,708)
Surplus/(deficit) for the year on Inreach Fund	34,068	(327,227)
(Deficit)/surplus for the year on TB Fund	(1,178,001)	581,460
(Deficit)/surplus for the year on Teen Fund Programme	(181,141)	421,258
Surplus for the year on MCP Project	165,654	-
Surplus for the year on Treatment Fund	137,671	-
Total comprehensive (loss)/income for the year	<u><u>(3,279,589)</u></u>	<u><u>649,745</u></u>

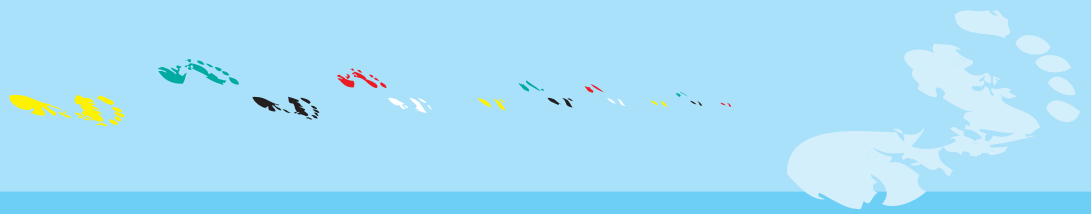


BOTSWANA-BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE
STATEMENT OF FINANCIAL POSITION
30 June 2010

	<u>2010</u> P	<u>2009</u> P
ASSETS		
NON CURRENT ASSETS		
Property, plant and equipment	11,276,196	10,102,294
CURRENT ASSETS		
Trade and other receivables	638,846	1,659,126
Cash and cash equivalents	<u>28,372,749</u> <u>29,011,595</u>	<u>30,593,339</u> <u>32,252,465</u>
TOTAL ASSETS	<u>40,287,791</u>	<u>42,354,759</u>
FUND AND LIABILITIES		
FUNDS		
Capital grant	10,607,200	9,770,698
Accumulated fund	2,505,125	1,586,192
Kitso training fund	(67,699)	72,732
Bana 1 trial fund	32,333	32,333
Bana 2 trial fund	19,025,268	21,289,580
Outreach Project Fund	(668,154)	(668,154)
Inreach Project Fund	372,362	338,294
TB Project Fund	(133,089)	1,044,911
Teen Project fund	240,116	421,258
MCP Project Fund	165,654	-
Treatment Fund	<u>137,671</u> <u>32,216,787</u>	<u>-</u> <u>33,887,844</u>
CURRENT LIABILITIES		
Trade and other payables	5,591,502	6,812,615
Provisions	<u>2,479,502</u> <u>8,071,004</u>	<u>1,654,300</u> <u>8,466,915</u>
TOTAL FUNDS AND LIABILITIES	<u>40,287,791</u>	<u>42,354,759</u>

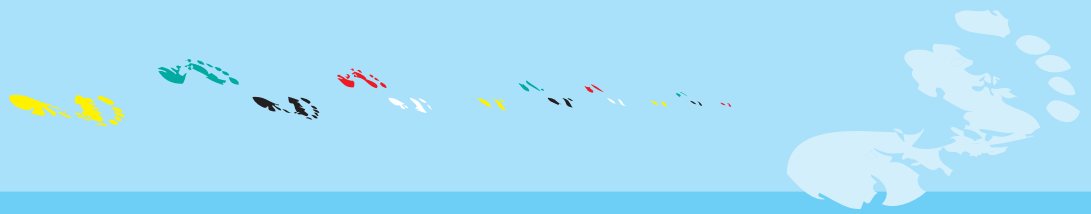
BOTSWANA - BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE
STATEMENT OF CHANGES IN FUNDS
for the year ended 30 June 2010

	Accumulated Fund		Kitso Training Fund		BANA 1 Trial Fund		BANA 2 Trial Fund		Outreach Project Fund		TB Project Fund		Teen Project Fund		MCP Project Fund		Treatment Project Fund		Capital Grant		Total
	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Balance as at 1 July 2008	1,310,649	310,374	32,333	20,437,408	463,451	665,521	-	-	-	-	421,257	-	-	9,973,732	32,706,022						
Grants received during the year	-	-	-	-	-	-	-	-	-	-	-	-	-	532,078	532,078						
Realised portion of capital grant	735,112	-	-	-	-	-	-	-	-	-	-	-	-	(735,112)	-						
Operating deficit for the year	(459,569)	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
(Deficit)/surplus for the year	-	(237,642)	-	852,172	581,461	(327,227)	421,257	-	-	-	-	-	-	-	-	1,109,313					
Balance as at 30 June 2009	<u>1,586,192</u>	<u>72,732</u>	<u>32,333</u>	<u>21,289,580</u>	<u>1,044,912</u>	<u>338,294</u>	<u>421,257</u>	<u>9,770,698</u>	<u>33,887,844</u>												
Grants received during the year	-	-	-	-	-	-	-	-	-	-	-	-	-	1,608,532	1,608,532						
Realised portion of capital grant	772,030	-	-	-	-	-	-	-	-	-	-	-	-	(772,030)	-						
Operating deficit for the year	146,903	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
(Deficit)/surplus for the year	-	(140,431)	-	(2,264,312)	(181,141)	34,068	(181,141)	165,654	137,671	-	-	-	-	-	-	(3,426,492)					
Balance at 30 June 2010	<u>2,505,125</u>	<u>(67,699)</u>	<u>32,333</u>	<u>19,025,268</u>	<u>(133,089)</u>	<u>372,362</u>	<u>240,116</u>	<u>10,607,200</u>	<u>32,216,787</u>												



BOTSWANA - BAYLOR CHILDREN 'S CENTRE OF EXCELLENCE
STATEMENT OF CASH FLOWS
for the year ended 30 June 2010

	<u>2010</u> P	<u>2009</u> P
CASH FLOWS FROM OPERATING ACTIVITIES:		
Surplus for the year	(3,279,589)	649,745
Adjustment for:		
Depreciation of property, plant and equipment	437,623	801,792
Loss on disposal of property, plant and equipment	<u>(15,270)</u>	<u>(2,609)</u>
Cash from operations before working capital changes	(2,857,236)	1,448,928
Decrease in trade and other receivables	1,020,280	431,485
Decrease in trade and other payables	(1,221,113)	(1,278,799)
Increase in provisions	825,202	162,320
Increase in capital grant	1,608,532	532,078
Net cash (used in)/generated from operating activities	<u>(624,335)</u>	<u>1,296,012</u>
CASH FLOWS TO INVESTING ACTIVITIES:		
Purchase of property, plant and equipment	(1,644,801)	(789,115)
Proceeds from disposal of property, plant and equipment	48,546	82,438
Net cash used in investing activities	<u>(1,596,255)</u>	<u>(706,677)</u>
NET (DECREASE)/INCREASE IN CASH AND CASH EQUIVALENTS	(2,220,590)	589,335
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	30,593,339	30,004,003
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>28,372,749</u>	<u>30,593,338</u>



BOTSWANA - BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE
ACCOUNTING POLICIES (continued)
30 June 2010

CASH AND CASH EQUIVALENTS

For the purpose of the cash flow statement, cash and cash equivalents comprise bank and cash balances.

RELATED PARTY TRANSACTIONS

Related parties are defined as those parties:

- (a) directly, or indirectly through one or more intermediaries, the party:
 - (i) controls, is controlled by, or is under common control with, the entity (this includes parents, subsidiaries and fellow subsidiaries);
 - (ii) has an interest in the entity that gives it significant influence over the entity; or
- (b) that are members of the key management personnel of the entity or its parent including close members of the family.

FINANCIAL INSTRUMENTS

Financial assets

Investments are recognised and derecognised on trade date where the purchase or sale of an investment is under a contract whose terms require delivery of the investment within the timeframe established by the market concerned, and are initially measured at fair value, plus transaction costs, except for those financial assets classified as at fair value through profit or loss (FVTPL), which are initially measured at fair value.

Financial assets are classified into the following specified categories: financial assets 'at fair value through profit or loss' (FVTPL), 'held-to-maturity' investments, 'available-for-sale' (AFS) financial assets and 'loans and receivables'. The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition.

The Centre's principal financial assets are 'loans and receivables'.

Loans and receivables

Trade receivables, loans, and other receivables that have fixed or determinable payments that are not quoted in an active market are classified as loans and receivables. Loans and receivables are measured at amortised cost using the effective interest method, less any impairment. Interest income is recognised by applying the effective interest rate, except for short-term receivables when the recognition of interest would be immaterial.

Effective interest method

The effective interest method is a method of calculating the amortised cost of a financial asset and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees on points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial asset, or, where appropriate, a shorter period. Income is recognised on an effective interest basis for debt instruments other than those financial assets designated as at FVTPL.



BOTSWANA - BAYLOR CHILDREN'S CLINICAL CENTRE OF EXCELLENCE
ACCOUNTING POLICIES (continued)
30 June 2010

FINANCIAL INSTRUMENTS (CONTINUED)

Financial assets (Continued)

Derecognition of financial assets

The Centre derecognises a financial asset only when the contractual rights to the cash flows from the asset expire; or it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Centre neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Centre recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Centre retains substantially all the risks and rewards of ownership of a transferred financial asset, the Centre continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

Financial liabilities

Classification as debt or equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement.

Financial liabilities

Financial liabilities are classified as either financial liabilities 'at FVTPL' or 'other financial liabilities'. The Centre's principal financial liabilities are 'other financial liabilities'.

Other financial liabilities

Other financial liabilities, including trade and other payables, are initially measured at fair value, net of transaction costs. Other financial liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective yield basis. The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period.

Derecognition of financial liabilities

The Centre derecognises financial liabilities when, and only when, the Centre's obligations are discharged, cancelled or they expire.



rather I'M LOUD!
ow the be'at
usic: best
it's
ool



BOTSWANA - BAYLOR

Children's Clinical Centre of Excellence

Plot No. 1836, Hospital Way, Princess Marina.

Private Bag BR 129, Gaborone, Botswana.

www.bayloraidsonline.org

