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Lesotho Medical Association Journal

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Table of Contents

From the President's Pen

Colleagues,

Having served in the executive committee of the LMA now for some five years it is an honour for me to serve as the president in this 2007 – 2008 term.

Evidently we are faced with new challenges as the health system prepares for the Private-Public Partnership Service. With that in mind, attracting the young Basotho doctors still in training for medical service as well as our international colleagues who want to serve this mountain Kingdom, love for work, dedication to the nation and consecration to the highest human values are called for more than ever.

This is my brief message with which I enter into this office soliciting the cooperation and collaboration of all good willed colleagues who are practicing medical doctors in this our beloved country.

Thank you

Dr. A.M. Mojela

Editors

Instructions for Authors

The Lesotho Medical Association Journal accepts editorials, original research papers, review papers, case discussions, clinical guidelines, letters and Lesotho medical news reviews.

The author should submit both an electronic and hard copy of the manuscript to the address below:

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Cover: Maletsunyane Falls, February 2007

The Demise of the Lesotho Pharmaceutical Corporation

M MOKETE, MD

During the worst period of apartheid rule, any states or territories bordering or within the Republic of South Africa that did not conform to the South Africa standard were punished with the resultant suffering of its population. Any non-compliant policies meant that drugs, hospital appliances, and vaccines were difficult to acquire or too expensive to buy. In response to this situation, the Lesotho Pharmaceutical Corporation (LPC) was born with the help of all men of goodwill and the Lesotho Government.

An infrastructure compatible with manufacturing drugs for local and international consumption was created. It achieved the goals of the project by manufacturing and selling to the National Drug Service Organisation (NDSO), a distribution arm of LPC, to the eighteen hospitals within Lesotho Government, the Christian Health Association of Lesotho mission hospitals and their satellite clinics, as well as the private sector in the country at reasonable prices for the consumers in an assured market.

The sales of LPC went beyond the borders of Lesotho and acquired lucrative markets in the former Bantustan Transkei territory, Botswana, Zimbabwe, Mozambique, Malawi and Uganda. LPC`s production and products met the international standards on competing markets. The small independent country enclaved within South Africa became famous as it stood its ground by maintaining its independence in drug production. The Alma Ata principles of primary health, namely affordability and availability, were met.

This was a huge success until the peak was reversed by Zimbabwe manufacturers distributing to Botswana and Mozambique not only on a competitive basis, but literally blocking LPC trade. A further blow to LPC was the Government policy to separate it from NDSO. NDSO could purchase from other suppliers in South Africa and distribute the products in competition with those manufactured by LPC.

In the latter years LPC has suffered the loss of business luster, especially in manufacturing as well as loss in management skills and business capacity to the extent of being broke.

The Lesotho Medical Association contends that as there is still a large potential in the health industry in Lesotho (hospitals, clinics, pharmacies, private medical practices, etc.) and the market is still viable, LPC is a national jewel that, with motivated national share holding, could rise from the dust and be itself again. Its infrastructure is still up to date hence the many business sharks who want to acquire it. Today there is HIV / AIDS and (XMD R) TB. Many countries are plagued with these pandemics and disasters and are looking high and low for infrastructures to initiate manufacturing or for the help of other sympathetic countries to at least continue with parts of manufacturing on a strategic basis to make the drugs cheaper. If the Lesotho Government intervened now for the revival and rescue of LPC there will be no regrets in the future.

An Update on the Lesotho Medical Association and its Members

M MOKETE, MD

The Annual General Meeting of the Lesotho Medical Association.

1. A new Lesotho Medical Association Executive was elected for 2007-2008.

President:	Dr. M. Mojela
Vice President:	Dr. P. Mcpherson
Secretary:	Dr. R. Molise
Secretary:	Dr. T. Mohapi
Member:	Dr. Rahman
Member:	Dr. M. Mokete

2. A new Lesotho Medical Association Editorial Board was elected for 2007-2008.

Editor:	Dr. M. Mokete
	Dr. T. Mohapi
	Dr. Lekhanya

3. Learning fora on HIV and AIDS have lively, active interdepartmental, multidisciplinary, inter-country participation by health professionals in the last Wednesday of every month at Hotel Victoria, Maseru.

4. Dr. N. Mosenene has joined the Mhim bili Hospital in Dar-e-salam for post graduate Ophthalmology course. Con gratulations.

5. Dr. P. McPherson has been reappointed the Medical Superintendant of Queen Elizabeth II Hospital from October 2007. Good luck.

6. Dr. M. Moteetee is the new Director General of Health Services in the Ministry of Health & Social Welfare. Con gratulations.

Radiological Diagnosis of Meningiomas by CT Scan in Queen Elizabeth II Hospital: A Study of 25 Cases

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INTRODUCTION

The "meninges" are the membranes that line the skull and vertebral column, effectively surrounding the central nervous system, consisting of the brain and spinal cord. These tumours are highly vascular. Blood supply of most meningiomas is mainly from the meningeal branches of the external carotid artery, but there is often a major supply from the internal carotid artery. Because the meningioma is a tumor of the meninges (the outer membranes), these tumors grow from the skull inward. If it is accessible, the surgery is easy, making the site of the lesion the first consideration for management as it is especially difficult to operate on meningiomas in the base of the skull.

The management of a patient with a meningioma begins with careful evaluation of the patient's history and clinical findings. The physician needs to have a clear understanding of the symptoms and how they are affecting the patient's life. The potential impact of other medical problems is also assessed.

For many patients with a meningioma, the only radiographic study needed for diagnosis is magnetic resonance imaging (MRI). If information is needed about bone detail, computed tomography (CT) is done. Angiography is indicated in cases where embolization may be a consideration or when more information about the arterial supply or venous drainage is needed to plan the operation than that which can be gained from MRI or magnetic resonance angiography.

Meningiomas are generally benign, meaning that they are not cancerous. However, a small portion can become malignant, usually the vascular angioblastic type. Recurrence after surgery is not uncommon, particularly in difficult sites where approach for complete excision is difficult. They do not spread to other areas of the body or invade and destroy tissue local to them.

Meningiomas make up nearly 1 in 5 of all primary brain tumours. They are most likely to be found in middle-aged or elderly adults, after age 40, but can occur at any age, including childhood, and are more common in women than in men. However these tumours at the site of tubercular sella are not rare in a younger age group, which was found in our study at Queen Elizabeth II Hospital. Multiple meningiomas occur in about 5% of cases which are usually located in the parasaggital region.

Risk factors for meningioma include:

- Radiation therapy (which involves radiation to the head)
- Female hormones (as it is high in female)
- Inherited nervous system disorders (like neurofibromatosis type 2).

MATERIALS AND METHODS

This study was carried out during the period of June, 2002 to May, 2007 at Queen Elizabeth II Hospital (QE II), in Maseru, Lesotho. All of the cases were referred to the Republic of South Africa for management. Though clinical history and physical examination findings of the patients were recorded, post-operative excisional biopsy reports were rarely returned to QE II for co-relation. Fortunately many patients came for a follow-up post-operative CT scan.

Table 1. Frequency of Cerebral Tumours (Sutton, 1971)

Gliomas	31.4
Metastases	20.3
Meningiomas	15.4
Angiomas	5.9
Pituitary Adenomas	4.4
Acoustic Tumours	1.5
Congenital Tumours	2.0
Granulomas	0.4
Miscellaneous	12.3

Table 2. International Incidence of Sites of Meningomas (in 100 cases)

Convexity	32
Parasaggital	26
Tuberculum Sella (Suprasellar)	13
Sphenoidal Ridge and Pterion	12
Cerobellopontine Angle	8
Subfrontal	3
Tentorium	2
Intraventricular	1

Our interest is in the incidence of meningiomas located at the base of the skull, especially around the sella-turcica. The following are often referred to the Department of Radiology by the Opthalmology department:

- Olfactory Groove Meningioma
- Tuberculum Sellae Meningioma
- Medial Sphenoid Wing Meningioma (Clinoidal Meningioma)
- Middle Ridge Sphenoid Wing Meningioma
- Hyperostosing Sphenoid Wing Meningioma
- Optic Sheath Meningioma
- Floor of Frongal Fossa Meningioma
- Cavernous Sinus Meningioma

Table 3. Incidence of Meningiomas in Lesotho (in 25 cases)

Convexity	6
Parasaggital	4
Tuberculum Sella (Suprasellar)	6
Clinoidal Meningioma	1
Cerobellopontine Angle	1
Subfrontal	2
Tentorium	1
Floor of Frontal Fossa Meningioma	1
Cavernous Sinus Meningioma	1
Optic Sheath	1

RESULTS AND OBSERVATIONS

Among the 25 patients studied in QE II Hospital, age ranged from 24 years to 72 years. Nine patients were above 60 years of ages, ten patients between 45 years and 60 years and the remaining six were between 24 years and 45 years. 18 patients were female and 7 were male.

Calcifications found in the 5 patients in the eldest age group were in cerebral convexity and the parasaggital region and one in the frontal fossa.

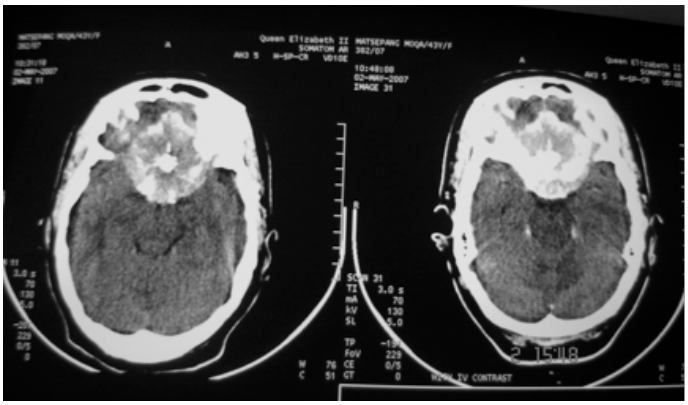

Figure 1. Frontal Fossa Meningioma: Non-contrast and with IV contrast, showing homogeneous enhancement.

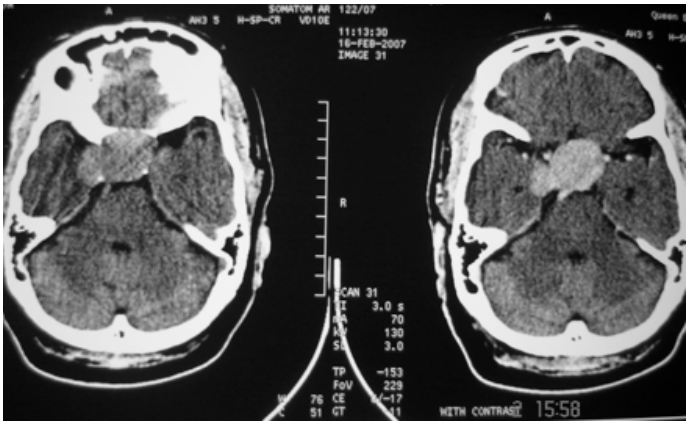

Figure 2. Tuberculum Sella Menigioma: Non-contrast and with IV contrast, showing homogeneous enhancement.

A follow-up study of cavernous sinus meningioma is mentioned here of a 24 year old male, who had persistent headache, nausea, vomiting and also had visual problem in his left eye. The contrast CT study diagnosis was cavernous sinus meningioma, which encroached the internal carotid artery and extended to the tip of the left optic canal. The patient was referred to a neurosurgeon at Bloemfontein Rose Park hospital. A transnasal excisional biopsy was done, and it was found to be benign meningioma. However, surgery was not successful for its difficult location and high vascularity. The patient was then treated in India, where he underwent Gumma knife surgery (radiation therapy). A follow-up MRI film showed the size had been reduced to half, six months after surgery. The patient is no longer exhibiting any symptoms. The next follow-up MRI/CT will be completed at QE II hospital. Selected films of the said patient are presented in Figures 3A and 3B.

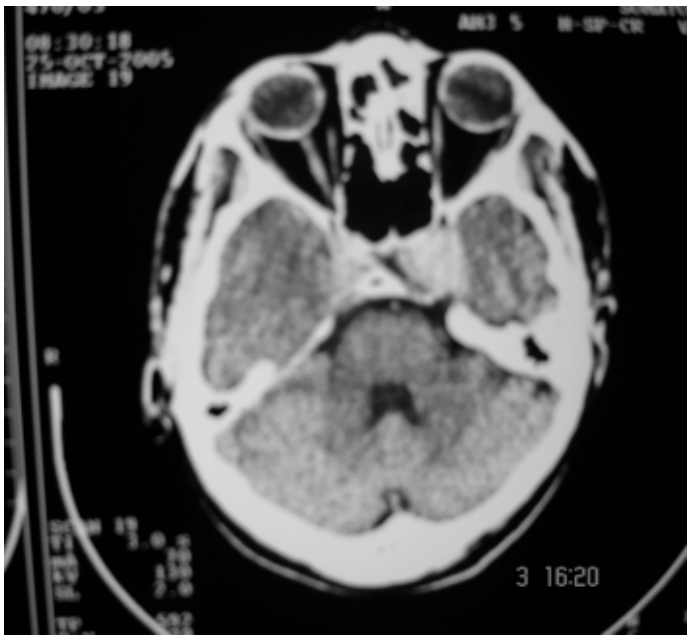

Figure 3A. Cavernous Sinus Menigioma (non-contrast)

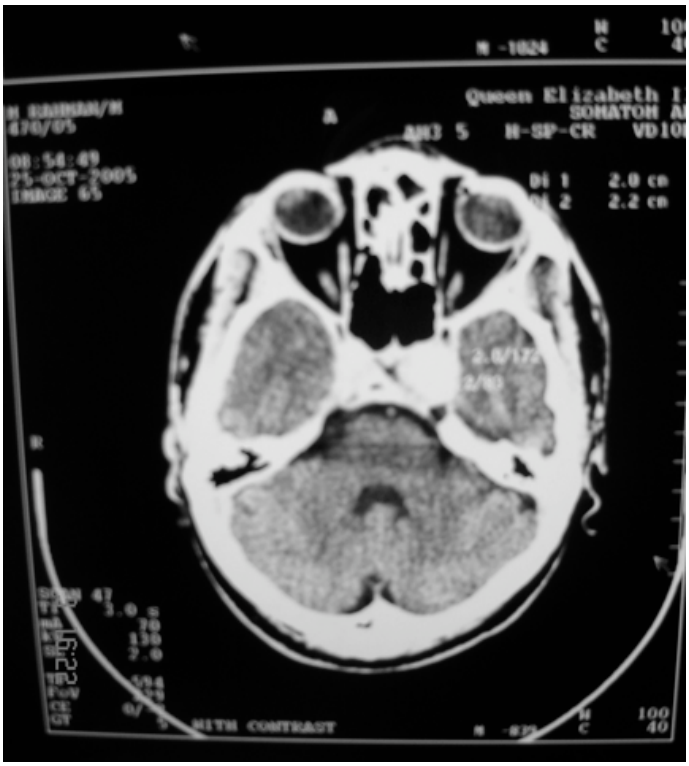

Figure 3B. Cavernous Sinus Menigioma, with IV contrast, showing strong homogeneous enhancement

DISCUSSION

Regular x-ray may show evidence of meningiomas on the basis of overlying bone changes or from calcification. Calcification occurs in about 15% of cases. Homogeneous ball-like calcification at a typical site is virtually diagnostic.

Computed Tomographic (CT) findings are described by using the terminology such as low attenuation (hypodense), high attenuation (hyperdense) and isodense (normal as brain tissue). Meningiomas are always homogenous hyperdense lesions, which take strong enhancement after IV contrast injection due to high vascularity. Oedema surrounding the tumour tends to be absent or minimal and circumscribed. Low-density cystic changes are rare and mass effect is also very rare (10%). Therefore, radiologcal diagnosis by CT is very obvious.

However, proper anatomical location using angiography/MRI is required in order to make an appropriate plan for surgery, especially at the tuberculum sellae/cavernous sinus area. Angiography has little use when the tumour is located adjacent to the saggital or other major sinuses. Most recent studies show that MRI is now superior to CT in the diagnosis of meningiomas.

MANAGEMENT

Management and prognosis of meningiomas depends on the site, size and histopathology of the tumours. Meningiomas of the cerebral convexity, Falx cerebri are the best location to do the excisional treatment whereas tuberculum sellae and cavernous sinus areas are difficult sites to approach.

In the case of tuberculum sellae meningiomas, the indication for surgical treatment is usually worsening of vision. Surgical removal of the tumour provides the best chance for relief of symptoms and the best possibility of curing the patient. Surgery should also be considered in an asymptomatic patient due to the likely probability of future visual symptoms. When large tumours involve the optic apparatus, internal carotid, or anterior cerebral arteries with dense adherence, it may be wise to leave a small amount of tumour (radical subtotal removal). Radiation therapy is recommended when there has been a subtotal removal with an inadequate decompression, or there is evidence of recurrence on MRI after radical subtotal removal. Transnasal approach of excisional biopsy was and even now is a common practice in most of the centers throughout Lesotho. However, due to the high vascularity, radiation therapy, or Gummas knife surgery replaced the surgical intervention in many centers.

MRI outlines the tumour and its relationship to the optic nerves, chiasm, and internal carotid artery and its branches. In most patients angiography is not needed and there is no indication for embolization.

CONCLUSION

Though MRI is the most superior modality, in most cases, CT scan is one of the important tools for investigation to detect meningiomas. Some patients required MRI/Angiography before intervention. Due to the recent development of Gumma knife surgery, it became an easy approach to treat meningiomas at the sellar region using a non-invasive technique. However, this technique is not available in most centers due to its high cost.

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Baylor International Paediatric AIDS Initiative Update: Paediatric HIV Care and Treatment in Lesotho

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INTRODUCTION TO BIPAI

The Baylor College of Medicine International Paediatric AIDS Initiative (BIPAI) was established in 1996 to foster international HIV/AIDS prevention, care and treatment, health professional education, and clinical research. It has rapidly grown to become the largest university-based program worldwide dedicated to improving the health and lives of HIV-infected children. The mission of BIPAI and its affiliated non-government organizations in Romania, Botswana, Lesotho, Swaziland, Malawi, Uganda, Burkina Faso, and Kenya is 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.

OVERVIEW OF BIPAI'S ROLE IN PAEDIATRIC HIV IN LESOTHO

According to the UNAIDS 2005 HIV/AIDS estimates and projections, approximately 15,600 children (age 0-14) are HIV-infected in Lesotho. The total number of orphans (age 0-18) is 180,000 and number of orphans due to AIDS (age 0-18) is 100,000.[1] The Government of Lesotho recognizes this overwhelming burden of disease in children due to HIV/AIDS, as well as a gap in the provision of services for these children. In response to this, in February 2005, the Government of Lesotho, Ministry of Health and Social Welfare (MOHSW), signed an agreement with BIPAI to collaborate on treatment, service, education, training, and research on HIV/AIDS to contribute to the improved care and management of HIV-infected children in Lesotho. Subsequently, Baylor College of Medicine Children's Foundation-Lesotho (BCMCF-L) was established as a BIPAI affiliated, non-government organization in Lesotho to provide the organizational structure for the management and operations of activities here in Lesotho.

In partnership with the MOHSW and with support from several other in-country organizations, BCMCF-L has made significant strides to catalyze care and treatment of HIV-infected and HIV-exposed infants and children, and provide health professional training throughout the country. Highlights in paediatric HIV care in Lesotho include:

- April 2005: Paediatric formulations of antiretroviral drugs arrive in the country.
- June 2005: First paediatric HIV training for health professionals is organized by MOHSW, supported by UNICEF, and facilitated by BIPAI.
- July 2005: First dedicated paediatric ARV clinic—Bophelong is inaugurated by former President Clinton of the United States, on the grounds of Queen Elizabeth II Hospital.

- December 2005: Baylor-Bristol Myers Squibb Children's Clinical Centre of Excellence (COE) is inaugurated by His Majesty King Letsie III. Construction of the building was funded by Bristol Myers-Squibb. Operations are funded by the MOHSW and managed by BCMCF-L.
- August 2006: Pediatric AIDS Corps (PAC) doctors, funded by BIPAI with support from Bristol Myers-Squibb and Baylor College of Medicine, arrive to assist with direct care and treatment of HIV-infected and HIV-exposed children and their families.
- September 2006: A Project Co-operation Agreement is signed with the MOHSW and UNICEF to expand the reach of BCMF-L beyond the Centre to provide care and treatment as well as health professional training at Queen Elizabeth II Hospital (Children's Medical Ward and Bophelong Paediatric ARV Clinic), Semonkong, Mafeteng, Mokhotlong, and Thaba Tseka.

Currently, the Centre provides the following services:

- HIV testing and counseling for infants, children, and adults
- Comprehensive care and treatment for children infected or exposed to HIV, including management of their antiretroviral therapy, acute illnesses, malnutrition, and opportunistic infections
- Family-centered, adult HIV care for caretakers of enrolled children with special circumstances
- Routine HIV care for pregnant women and subsequent enrollment of their infants into HIV-exposed care
- Pharmacy services to dispense medications necessary for the management of HIV and its related illnesses
- Social services to assist with HIV education and provide support for adherence and general social issues, including food packages and transport to/from Centre
- All of the services listed above can be accessed on a "walk-in" basis—no referral is required; additionally, all services and medications are provided free of charge

BAYLOR CHILDREN'S FOUNDATION: LESOTHO UPDATE

Since opening its doors on December 1, 2005, the Baylor Centre has tested over 2,900 children and 900 adults. At the time of this writing (Oct 2007), 1,603 HIV-infected/HIV-exposed children have been enrolled into care and 589 initiated on ARVs; 131 adults have been enrolled in care and 51 initiated on ARV treatment. The Centre has had over 17,000 patient encounters since opening. With regards to health professional training and capacity building, over 400 hours of teaching have been completed by BIPAI staff via didactic lectures and hands-on mentoring throughout the country. Over 900 learners have attended BIPAI presentations, with 130 receiving hands-on mentoring. A year-in-review paper reporting early outcomes of our program over our first fourteen months of operation is currently in its final stages of preparation and will be shared upon completion.

PAEDIATRIC CARE AND TREATMENT CLINICAL UPDATE

HIV/AIDS care and treatment for children notoriously lags behind adults. Worldwide, approximately 15% of all those in need of antiretroviral therapy are children. In Lesotho, cur-

rently, only 10% of those receiving antiretroviral therapy are children. Increased testing and enrollment of infants and children into HIV care is needed. This section will provide an overview of the key differences between paediatric and adult HIV care and treatment to highlight the need for increased efforts to scale-up care for HIV-infected and HIV-exposed children.

Pathophysiology of HIV-infection in a child

HIV-infected children are more vulnerable and experience more rapid disease progression compared to adults. Because a child's immune system is immature, it cannot contain viral replication as well as an adult's immune system, resulting in accelerated disease progression. In adults, clinical latency may average eight to ten years. However, in infants and children, this period may only be two to four years. Without appropriate care, approximately 40% of HIV-infected infants will die by their second birthday.[2] Therefore, the identification and testing of infants and children must be prioritized due to their vulnerability and high risk of early morbidity and mortality.

HIV Diagnosis: Infants can be tested!

Often, infants are not tested using standard HIV rapid tests due to the myth that testing is inconclusive due to the presence of maternal antibodies. Rapid testing an infant, however, does provide critical information—that the infant has been HIV-exposed, could possibly be HIV-infected, and therefore needs to be enrolled into appropriate care and most importantly, started on co-trimoxazole. Starting co-trimoxazole prophylaxis on all HIV-exposed infants can be a life-saving measure for these high risk babies. Also, by one year of age, approximately 90% of HIV-exposed babies have lost their maternal antibodies. Hence, a negative rapid test at this age could confirm the negative status of a child.

In April 2005, HIV DNA PCR testing was introduced in Lesotho to improve early infant diagnosis. Using HIV DNA PCR, the presence of the HIV virus in an infant can be confirmed and a definitive diagnosis can be made. Testing is done with a simple heel prick and dried blood spot technique. Results are obtained in approximately four to six weeks. By identifying HIV-positive infants early, they can be enrolled into appropriate care and started on antiretroviral therapy if needed before signs and symptoms of illness present.

Since Lesotho is currently in the process of scaling-up HIV DNA PCR testing, it may not yet be available in all areas of the country. Therefore, *presumptive* diagnosis of severe HIV disease in infants and children must be emphasized to ensure that sick infants receive potentially life-saving antiretroviral therapy. The World Health Organization criteria for presumptive diagnosis are outlined below:

Table 1. Clinical criteria for presumptive diagnosis of severe HIV disease in infants and children < 18 months of age

A presumptive diagnosis of severe HIV disease should be made if:

- The infant is confirmed HIV antibody positive; *and*
- Diagnosis of any AIDS indicator condition(s) can be made; *or*
- The infant is symptomatic with two or more of the following: (a) oral thrush, (b) severe pneumonia, (c) severe sepsis

Other factors that support the diagnosis of severe HIV disease in an HIV seropositive infant include:

- Recent HIV-related maternal death; *or* advanced HIV disease in the mother
- CD4 < 20% in infant.

Confirmation of the diagnosis of HIV infection should be sought as soon as possible.

Source: World Health Organization, "Antiretroviral Therapy of HIV Infection in Infants and Children: Towards Universal Access," August 2006.

IMCI definitions:
a. Oral thrush: Creamy white to yellow soft small plaques on red or normally colored mucosa which cannot easily be scraped off (pseudomembranous), or red patches on tongue, palate or lining of mouth, usually painful or tender
b. Severe pneumonia: Cough or difficult breathing in a child with chest indrawing, stridor or any of the IMCI general danger signs; i.e., lethargic or unconscious, not able to drink or breastfeed, vomiting, and presence or history of convulsions during current illness; responding to antibiotics.
c. Severe sepsis: Fever or low body temperature in a young infant with any severe sign such as fast breathing, chest indrawing, bulging fontanelle, lethargy, reduced movement, not feeding or sucking breast milk, convulsions

Clinical and Immunological Staging of Paediatric HIV

Like adults, HIV-infected infants and children are also clinically staged to determine severity of disease. However, paediatric staging criteria differ slightly from adult staging critera. For example, unexplained persistent diarrhea is defined as lasting more than 14 days in children as opposed to one month in adults. Also, recurrent bacterial pneumonia is considered a stage 3 classification in children, whereas in adults it is stage 4. The opposite is true of severe recurrent bacterial infections; it is a stage 4 classification in children and stage 3 in adults. Of note, HIV-infected children also suffer from lymphocytic interstitial pneumonitis (stage 3) and HIV encephalopathy (stage 4) which is manifested by developmental delay and small head circumference. Table 2 shows staging criteria for infants and children infected with HIV. Performing a routine history and physical examination on all HIV-infected children is important to determine paediatric HIV clinical staging. The importance of clinical staging is especially important for children since CD4 counts and percentages are often difficult to obtain, and eligibility for antiretroviral therapy may hinge on clinical staging.

Table 2. WHO clinical staging of HIV for infants and children 2006
For use in those under 15 years of age with established HIV infection

CLINICAL STAGE 1
Asymptomatic Persistent generalized lymphadenopathy (PGL)
CLINICAL STAGE 2
Unexplained persistent hepatosplenomegaly Papular pruritic eruptions Extensive wart virus infection (facial, >5% of body area or disfiguring) Extensive molluscum contagiosum (facial, >5% of body area or disfiguring) Recurrent oral ulcerations (2 or more episodes in 6 months) Unexplained persistent parotid enlargement Lineal gingival erythema (LGE) Herpes zoster Recurrent or chronic upper RTIs (otitis media, otorrhoea, sinusitis, tonsilitis) Fungal nail infections

CLINICAL STAGE 3
Unexplained moderate malnutrition not adequately responding to standard therapy
Unexplained persistent diarrhoea (14 days or more)
Unexplained persistent fever (> 37.5°C, intermittent or constant, for longer than 1 month)
Persistent oral candidiasis (after the first 6 weeks of life)
Oral hairy leukoplakia
Acute necrotizing ulcerative gingivitis/periodontitis
Lymph node TB
Pulmonary TB
Severe recurrent bacterial pneumonia
Symptomatic lymphoid interstitial pneumonitis (LIP)
Chronic HIV-associated lung disease including bronchiectasis
Unexplained anaemia (< 8.0 gm/dl), neutropenia (< $0.5 \times 10^9/L^3$) or chronic thrombocytopenia (< $50 \times 10^9/L^3$)
CLINICAL STAGE 4
Unexplained severe wasting, stunting or malnutrition not responding to standard therapy
Pneumocystis pneumonia
Recurrent severe bacterial infections (eg. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia)
Chronic Herpes Simplex infection (orolabial or cutaneous > 1 month's duration, or visceral at any site)
Extrapulmonary TB
Kaposi sarcoma
Oesophageal candidiasis (or candida of trachea, bronchi, or lungs)
CNS toxoplasmosis (after the neonatal period)
HIV encephalopathy
CMV infection (retinitis or affecting another organ, with onset at age > one month
Extrapulmonary Cryptococcosis (including meningitis)
Disseminated endemic mycosis (extrapulmonary Histoplasmosis, Coccidiomycosis)
Chronic Cryptosporidiosis (with diarrhoea)
Chronic Isosporiasis
Disseminated non-tuberculous mycobacteria infection
Cerebral or B cell non-Hodgkin lymphoma
Progressive multifocal leukoencephalopathy (PML)
HIV-associated cardiomyopathy or nephropathy
HIV-associated rectovaginal fistula

Source: World Health Organization, "Antiretroviral Therapy of HIV Infection in Infants and Children: Towards Universal Access," August 2006

Immunologically, children are staged according to CD4 percentage and/or absolute CD4 cell count. Absolute CD4 count varies with age. In HIV uninfected children, absolute CD4 count is comparatively higher than adults; normal absolute CD4 counts in children slowly decline over time and reach adult levels by 6 years of age. Since CD4 percentage is less variable in children, it is the preferred immunological parameter for monitoring HIV disease progression in children less than 6 years of age. Of note, CD4 percentage/count can decline very rapidly in infants less than 12 months of age. Table 3 shows the criteria for immunological staging of children according to age.

Table 3. WHO immunologic classification of HIV-associated immunodeficiency in infants and children

Classification of HIV-Associated Immunodeficiency		≤ 11 Months (%)	12-35 Months (%)	36-59 Months (%)	≥ 5 Years (cells/mm^3)
Not significant		> 35%	> 30%	> 25%	> 500
Mild		30-35%	25-30%	20-25%	350-499
Advanced		25-30%	20-25%	15-20%	200-349
Severe	CD4%, or absolute CD4 count	< 25%, or < 1500 cells/mm^3	< 20%, or < 750 cells/mm^3	< 15%, or < 350 cells/mm^3	< 15%, or < 200 cells/mm^3

Source: World Health Organization, "Antiretroviral Therapy of HIV Infection in Infants and Children: Towards Universal Access," August 2006

Treatment of Paediatric HIV

Although antiretroviral therapy is the cornerstone of paediatric HIV treatment, a comprehensive approach must be utilized to ensure effective therapy. Like adults, prior to the initiation of antiretroviral therapy, acute illnesses, tuberculosis, and opportunistic infections should be treated and/or stabilized. For children, addressing nutrition and immunizations, as well as providing co-trimoxazole prophylaxis cannot be overemphasized. Adherence counseling must be done with committed caretakers. Issues of disclosure of HIV status should also be addressed with families. Table 4 shows the WHO clinical guidelines for antiretroviral initiation and Table 5 shows the WHO immunological guidelines for antiretroviral initiation.

Table 4 WHO Clinical Guideline for ARV Initiation

WHO Clinical Stage	< 12 months	≥ 12 months
4	Treat All	Treat All
3	Treat All	Treat All; CD4-guided in those with TB, LIP, oral hairy leukoplakia, thrombocytopenia
2	CD4-guided	CD4-guided
1	CD4-guided	CD4-guided

Table 5 WHO Immunologicial Guidelines for ARV Initiation

	≤ 11 months	12-35 months	36-59 months	≥ 5 years
CD4 %	<25%	<20%	<15%	<15%
CD4 Absolute Count	<1500 cells/mm^3	<750 cells/mm^3	<350 cells/mm^3	<200 cells/mm^3

The first-line antiretroviral treatment regimen for children in Lesotho consists of Zidovudine (AZT) or Stavudine (D4T) + Lamivudine (3TC)

+ Nevirapine (NVP) or Efavirenz (EFV). Choosing the appropriate regimen depends on age and clinical evaluation/laboratory investigations. Of note, the inability to perform laboratory investigations should not prevent children from receiving antiretroviral therapy. Medication dosing is weight dependent; weight banded dosing cards are widely available for use.[4] Also, paediatric formulations in the form of syrups, as well as paediatric fixed dose combinations are available in the country.

Currently, the Lesotho ART Guidelines are under revision and will be published in the near future.

FUTURE DIRECTIONS

Despite the high burden of HIV disease among children in Lesotho, there is hope. With antiretroviral therapy, over 80% of HIV infected children will survive beyond their sixth birthday.[3] Identification, testing, enrollment and initiation of treatment for infants and children are and critical to improving survival and health of Basotho infants and children. Through continued partnership with the MOHSW, support from on-the-ground organizations, and community involvement, efforts to scale-up paediatric HIV care and treatment throughout the country by de-centralizing care, training health professionals and building capacity, and strengthening systems and infrastructure, will transform the lives of Basotho children and families.

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Challenges Doctors Face in Resource Limited Settings

Adapted from a presentation given at the Annual General Meeting of the LMA on July 28, 2007

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INTRODUCTION

Within the kingdom of Lesotho, disease burden has increased due to increasing levels of poverty, joblessness, a weak health system, civil instability, HIV/AIDS and the current emergence of resistance to some treatments. The continent of Africa is suffering from 25% of the world's burden of disease, and yet only represents 1.3% of the world health workforce.

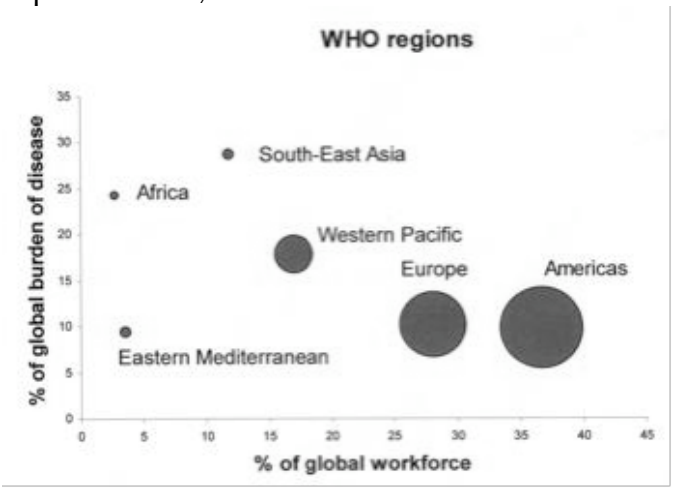

Figure 1. Distribution of health workers by level of health expenditure and burden of disease (Source: WHO 2006 *The World Health Report 2006 - Working Together for Health.* Geneva, World Health Organization).

This inequity of disease and availability of treatment is evident in Lesotho's health statistics:

- Crude Birth Rate: 30/1000 (2004)
- Crude Death Rate: 12.8/1000 (1996)
- Infant Mortality Rate: 91/1000 (1999)
- Maternal Mortality Rate: 762/100,000 (2001)

These indicators represent the urgency for a new standard of care, beginning with the crucial need for more health workers.

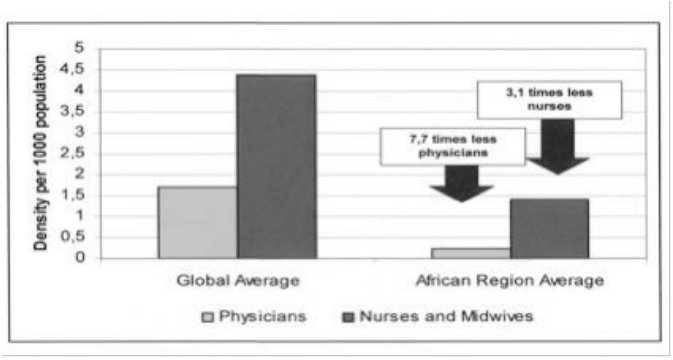

Figure 2. Comparison of African and Global Densities of key health cadres (physicians and nurses)

HUMAN RESOURCES FOR HEALTH IN LESOTHO

Throughout Lesotho, there are a total of 8,600 people employed in the health sector. This equates to 44% working for the Government of Lesotho, Christian Health Association of Lesotho, non-government organizations, and Private-for Profit organizations. Of the total, 20% are working in primary health care, 46% at secondary health care, and 24% at tertiary health care levels. Approximately 90% of personnel in service production are in the nursing cadre, while only 2.9% of health sector employees are doctors, constituting 8% of personnel in service production. This results in a coverage rate of 0.16/1000 in Maseru, 0.02 in Mohale's Hoek, and 0 in Qacha's Nek.

In addition to doctors and the nursing cadre, Lesotho's human resources for health are distributed as follows:

Personnel	% of Health Sector	Coverage
Dental	0.4	.07/1000
Pharmacy	1.6	.03/1000
Radiography	0.4	.006/1000
Laboratory	2.0	.03/1000
Environmental Services	1.4	.02/1000

These statistics are grim, and need to change in order to provide appropriate care to the people of Lesotho.

GLOBAL PERSPECTIVES ON HUMAN RESOURCES FOR HEALTH

All countries in Africa are being challenged by a double crisis of fragile health systems and weak human resources for health (HRH). In addition to the high rates of disease and low numbers of health service employees, continuing brain drain from Africa to the developed world is overwhelming. Many medical professionals are completing their education in African countries and then establishing their careers abroad.

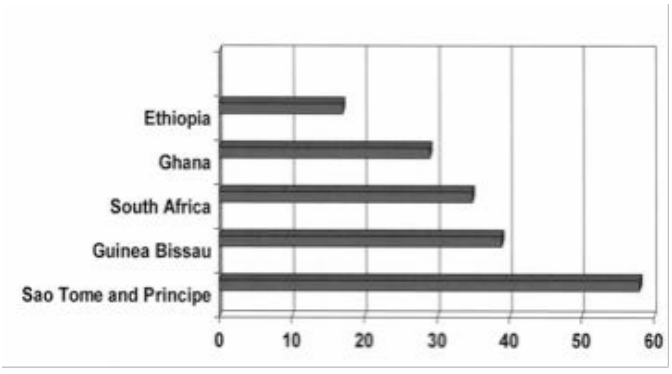

Figure 3. Percent of Doctors Trained in African countries but now working abroad.

There is a clear and present need to restructure the human resource system and resolve these problems. In 1998, the World Health Organization (WHO) adopted the Regional Strategy for Development of HRH (AFR/RC/48/R3), which resolved to formulate policies and plan for the development of health care workers, especially focusing on human resource services. In 1999 and 2000, the World Health Assembly called for concerted action on international migration of health personnel (WHA57.19, WHA58.19). This movement towards reform and development is critical.

THE FRONTIER ISSUES IN HRH

At the front of this movement are key issues that need to be addressed in order to facilitate change. The first and foremost is an overall weak health care system. It is difficult to restructure one aspect of functionality when the entire system is need of support. At the same time, there is inadequate allocation of funds to the health sector. Simply put, solving the need for more employment requires more money. Pay is low and benefits are minimal, if existent. This does not create an attractive working environment. Globally, there are vast technological gaps between health care systems in resource limited settings and those in developed countries, restricting access to digital resources and telemedicine as well as the latest innovations in surgical and diagnostic techniques, equipment, and drugs. Health care personnel are eager to partake in medical modernization, however they need to travel abroad to do so. Various health facilities in Lesotho as well as other resource limited settings experience erratic stock outs of commodities that are required in order to provide appropriate care to patients.

A physician practicing in such a setting is not offered appropriate clinical support. There is a lack of peer supervision and inadequate in-service training. A high staff attrition rate and deficient referral systems are further challenges. Additionally, there is a general resistance to integrating modern medical practices in the traditional healing system, and a tendency at higher levels of the health system to be detached from the ground realities.

STRATEGIC CONSIDERATIONS

In light of the challenges faced by doctors in resource limited settings, there are some strategies to consider. It would be beneficial for HRH programs to promote new and innovative public-private partnerships, as well as to integrate aspects of the traditional healing system into the formal health sector. Another strategy is to mobilize additional resources through pro-poor strategies for HRH incentive schemes. It is also important to cultivate the commitment and support of policy makers and other stakeholders in improving the conditions of service for HRH.

Additional strategic considerations are to support investments in new infrastructure and the adoption of appropriate technologies, and to promote the proactive procurement, distribution and storage of commodities for service provision. In order to increase staff morale and motivation, it is essential to promote work environments that are safe, not crowded, and conducive to job satisfaction.

Strategies for HRH could also employ the provision of incentives - such as sponsorship for undergraduate or postgraduate education in exchange for service, and the creation and maintenance of a reward system for serving health workers.

RECENT PARTNERSHIP INITIATIVES

There are several programs which are working to improve the field of HRH. The Global Health Workforce Alliance is a partnership dedicated to identifying and implementing solutions to the health workforce crisis. The African Health Workforce Platform advocates for a coordinated African voice on the health workforce action agenda. The Africa Health Work Force Observatory works to gather and disseminate information and evidence about the health workforce.

SUPPORTING HRH IN RESOURCE LIMITED SETTINGS

The capacity of countries to address health worker shortages can be improved by providing consultants to countries to respond to HRH constraints on a regular and long-term basis, supporting resource mobilization for HRH technical support to countries, and spacing the implementation recommendations into short-term, medium-term, and long-term plans. Increased political and financial commitment to HRH development should also be fostered at the country level.

Efforts to address the HRH crisis can be strengthened by supporting existing partnerships - such as the African Platform for Health Workforce and the Africa Health Workforce Observatory. These efforts could also include a commitment to the WHA resolution on Scaling Up Health Workforce Production, and a lobby for mobilizing substantial funding into health workforce development. National strategic plans can also support country efforts.

CONCLUSIONS

For current and future HRH initiatives, joining efforts behind a common agenda is needed. To keep the momentum going and consolidate the gains already made, it is important to build on existing efforts and continuity and avoid reinventing the wheel.

In the short-term development of HRH, the focus should be on technical aid corps, and bilateral support between GOL and other SADC governments. In the long-term development, the focus should be to review and upgrade remuneration packages to be in line with those of neighboring countries. Finally, the human resources development strategic plan must include a very strong monitoring and evaluation component at the central and district levels in view of decentralization.

An Historical Perspective: Lesser Known Duties of Medical Officer in Lesotho

S.T. MAKENETE, MBCHB[1]

INTRODUCTION

In the early 1950's, Maseru Hospital was usually run by 3 medical officers, and one or more housemen (interns). From that time, the hospital was recognized by the South African Medical Council for intern pre registration training.

At that time, there were no outstations or clinics, although we were frequently called out to investigate outbreaks of suspected cases of small pox, typhoid, measles etc. The outpatient or dispensary was located in a Prefab building where now stands the new development planned for the Ministry of Health Headquarters, which at the time was located in the nearby blood transfusion service building, recently demolished to make room for a parking area.

Few medical officers remain in Lesotho who performed the less desirable duties that were among our responsibilities in the 1950's. It is, however, a very real part of the history of the medical profession in Lesotho.

CORPORAL PUNISHMENT

Among a medical officer's duties was to witness the infliction of corporal punishment on those sentenced by a court of law, which was quite common, especially on juveniles. Usually this punishment was meted out by the heaviest of warders. The only good thing about this duty was that the medical officer's word was final; if the caning was not on the right anatomical place, or if it was too heavy or blood was drawn, the medical officer could speak up at any point, and it stopped. I often exercised this act of mercy. After all, a doctor's duty is to alleviate pain and suffering, not to cause it or see it caused.

Later, after independence, Lesotho received "Dutch Aid" in the form of volunteer doctors. These doctors refused to witness these barbaric acts, threatening to return home if government insisted on their attendance. The requirement was discontinued.

"RITUAL MURDERS"

Some may recollect that the period under discussion was the height of the so-called "ritual murders" period. I say "so-called" because after performing dozens of medico legal post mortems, I can only recall two or three cases where I could boldly declare it as a case of ritual murder. Sadly I don't remember any of those cases coming up in court.

Typically, a corpse would be brought in for post mortem, usually thought to be homicide or an accidental fall without any suspicion of foul play. Three or four years later, the case would come up and evidence would show that this was a suspected case of ritual murder. In one case, a witness stated that she had seen the

ritual act being performed through a crack in the door. The deceased had been stabbed in the chest with a sewing needle (tholopini) and blood was collected into a Vaseline bottle. The wound was then sealed with a hot iron, yet at post mortem there had been no haemothorax or any sign of a puncture wound. In another case, a woman was alleged to have been the victim of a ritual murder and portions of her private parts removed. I had done a post mortem examination 3 or 4 years before the case was heard in the high court and noted no evidence of body portions removed. A witness however stated that parts of both labia majora and minora were removed as well as the clitoris (as is normally done at initiation – lebollo). Now who would normally examine for the presence or absence of the clitoris? My evidence was therefore discredited.

HANGING

Persons convicted of ritual murder were sentenced to death. A medical officer was to be present at the hanging to certify death. I witnessed one such hanging of a one legged man, for whom I suppose the hangman did not calculate the distance of the fall properly due to the man's physique. As a result, rather than hanging until he was dead, he was decapitated – the trunk falling to the ground and the head remaining on the noose. His heart kept beating for what appeared to be many hours, and I accordingly could not pronounce him dead until it had stopped.

I believe that death by hanging is still pronounced as a sentence but cannot be executed, as there would not be a hangman ('lakesmane'), Those holding this position are from South Africa, and are no longer involved with the courts in Lesotho.. Now, instead of death sentences, those found guilty are sentenced to life imprisonment.

Fortunately, today's medical officers are spared from such unpleasant duties.

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