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The **Zambia Health Digest** is produced to provide current information to **health workers** who have little access to current health related publications and information.

The abstracts of journal articles published in this quarterly **Digest** are obtained from the **Medline** database provided by the **Dreyfus Health Foundation of New York**. Abstracts are also selected from a database of **Zambian health articles**, which is continually being compiled at the **UNZA Medical Library**. Readers are encouraged to send in their work for inclusion in this **Zambian health information database**.

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**Zambia Health Information Digest**  
**July - September 2001**

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**EDITORIAL**

Cervical cancer is an important women's reproductive health problem, especially in African countries where many women die from the disease each year. Unlike many cancers, cervical cancer can be prevented.

The abstracts herein give information on cervical cancer, with a focus on prevention of cancer through identification and treatment of precancerous lesions as well as on treatment of invasive disease.

In this issue we have also focussed primarily on HIV/AIDS as it affects the educational system in the country. Its impact on education is twofold: on the teaching staff as well as the school going children.

And finally we we have included an article on the Polio virus.

Thank you.

**CURRENT ABSTRACTS : CERVICAL CANCER  
IN AFRICA**

S Afr Med J 2001  
Jun;91(6):525-8

**Large-cell neuroendocrine carcinoma of the uterine cervix—a clinicopathological study of five cases.**

Rhemtula H, Grayson W, van Iddekinge B, Tiltman A.

Department of Obstetrics and Gynaecology, University of the Witwatersrand, Johannesburg.

**OBJECTIVE:** The present study describes 5 cases of large-cell neuroendocrine carcinoma (LCNEC) of the uterine cervix, evaluating their clinical features and pathological profiles. **METHODS:** Clinical data were obtained from the patients' clinical files at the combined gynaecological-oncology unit of Johannesburg Hospital and the University of the Witwatersrand Medical School, Johannesburg, South Africa. A histopathological diagnosis was obtained after biopsy material from all 5 patients was examined microscopically and subjected to immunohistochemical staining with MNF116 (pankeratin) synaptophysin and chromagranin A, all of which are neuroendocrine markers. Two patients received pelvic radiotherapy only. None of the 5

patients in this series received chemotherapy or underwent surgery. **RESULTS:** All 5 patients were adult females, with an average age of 57.3 years. The majority were multiparous, with the most common presenting complaint being vaginal bleeding. Three of the 5 patients presented with advanced-stage cervical carcinoma, with evidence of metastases in 2 of them. Treatment responses and long-term survival in our series proved to be disappointing as 3 of the 5 patients died in less than 6 months. On histopathological examination, all 5 tumours showed features of a high-grade poorly differentiated malignant neoplasm with ulceration and extensive tumour necrosis including trabecular and organoid growth patterns. All 5 neoplasms also showed strong immunoreactivity for MNF116, while their endocrine nature was confirmed by staining for synaptophysin in all cases. None of the tumours showed positive staining for chromagranin A. **CONCLUSIONS:** LCNECs are rare tumours and distinct from other neoplasms of the uterine cervix. The results of this study reaffirm the biologically aggressive nature of this uncommon tumour and its very unfavourable prognosis.

Int J Gynecol Cancer 2001; May  
Jun;11(3):194-7

**Invasive cervical cancer and human immunodeficiency virus (HIV) infection: a South African perspective.**

Moodley M, Moodley J, Kleinschmidt I.

Department of Obstetrics and Gynaecology and MRC/UN Pregnancy, Hypertension Research Unit, Nelson R Mandela School of Medicine, University of Natal, South Africa; Biostatistics, Medical Research Council, South Africa.

Moodley M, Moodley J, Kleinschmidt I. Invasive cervical cancer and human immunodeficiency virus (HIV) infection: a South African perspective. The aim of this study was to compare the prevalence and presentation of cervical cancer in HIV-positive and HIV-negative women in our local population. Six hundred and seventy-two patients with cervical cancer presented to the gynecology oncology unit of King Edward VIII Hospital, South Africa. The HIV seroprevalence among these patients was 21%. There was an increase in the background prevalence of HIV infection (1.6-32.5%) as well as a quadrupling in the prevalence of HIV infection among patients with invasive cervical cancer (5-21%)

over a 10-year period. The mean ages of the HIV-negative patients and HIV-positive patients were 55.2 and 39.8 years, respectively. Most of the HIV-positive patients were in the 30- to 40-year-old age group (51%), whereas the majority of patients who were HIV negative were in the 50- to 60-year-old age group (36%). The majority of patients, irrespective of HIV status, were more likely to have late stage disease than early stage disease. There was an increase in HIV infection in patients with both types of background prevalence and among patients with invasive cervical cancer. The mean age of HIV-positive patients was 15 years younger than that of the HIV-negative patients. The majority of patients, irrespective of HIV status, presented with late stage disease.

JAMA 2001 Jun  
27;285(24):3107-15

**Policy analysis of cervical cancer screening strategies in low-resource settings: clinical benefits and cost-effectiveness.**

Goldie SJ, Kuhn L, Denny L, Pollack A, Wright TC.

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**CONTEXT:** Cervical cancer is a leading cause of cancer-related death among women in developing countries. In such low-resource settings, cytology-based screening is difficult to implement, and less complex strategies may offer additional options.

**OBJECTIVE:** To assess the cost-effectiveness of several cervical cancer screening strategies using population-specific data. **DESIGN AND SETTING:** Cost-effectiveness analysis using a mathematical model and a hypothetical cohort of previously unscreened 30-year-old black South African women. Screening tests included direct visual inspection (DVI) of the cervix, cytologic methods, and testing for high-risk types of human papillomavirus (HPV) DNA. Strategies differed by number of clinical visits, screening frequency, and response to a positive test result. Data sources included a South African screening study, national surveys and fee schedules, and published literature. **MAIN OUTCOME MEASURES:** Years of life saved (YLS), lifetime costs in US dollars, and incremental cost-effectiveness ratios (cost per YLS). **RESULTS:** When analysing all strategies performed as a single lifetime screen at age 35 years compared with no screening, HPV testing followed by treatment of screen-positive women at a second visit, cost \$39/YLS (27% cancer

incidence reduction); DVI, coupled with immediate treatment of screen-positive women at the first visit was next most effective (26% cancer incidence reduction) and was cost saving; cytology, followed by treatment of screen-positive women at a second visit was least effective (19% cancer incidence reduction) at a cost of \$81/YLS.

For any given screening frequency, when strategies were compared incrementally, HPV DNA testing generally was more effective but also more costly than DVI, and always was more effective and less costly than cytology. When comparing all strategies simultaneously across screening frequencies, DVI was the nondominated strategy up to a frequency of every 3 years (incremental cost-effectiveness ratio, \$460/YLS), and HPV testing every 3 years (incremental cost-effectiveness ratio, \$11 500/YLS) was the most effective strategy.

**CONCLUSION:** Cervical cancer screening strategies that incorporate DVI or HPV DNA testing and eliminate colposcopy may offer attractive alternatives to cytology-based screening programs in low-resource settings.

Eur J Cancer 2001  
Jul;37(10):1188-201

### Epidemiology of AIDS-related tumours in developed and developing countries.

Dal Maso L, Serraino D, Franceschi S.

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AIDS-associated illnesses include Kaposi's sarcoma (KS), non-Hodgkin's lymphoma (NHL), and, since 1993, invasive cervical cancer (ICC). Between 1988 and 1998, among AIDS cases reported in western Europe, 9.6% had KS and 3.9% had NHL as AIDS-defining illnesses. Between 1988 and 1998, the frequency of KS decreased from 13.4 to 6.4%, while NHL increased from 3.8 to 5.3%. Estimates of the relative risk (RR) of neoplasms in HIV-seropositive populations came from population-based cancer and AIDS registries linkage studies conducted in the United States, Italy and Australia and from a few cohort and case-control studies. In adults with HIV/AIDS, the RR was over 1000 for KS and ranged between 14 for low-grade NHL and over 300 for high-grade NHL. For Hodgkin's disease (HD), a consistent 10-fold higher RR was observed. For cervical and other anogenital tumours associated with human papilloma virus, risk

increases were 2- and 12-fold, depending upon location. In Africa, the AIDS epidemic led to KS becoming the most common cancer type in men in several areas. The RR of AIDS-associated tumours were lower in Africa than those reported in western countries.

Acta Cytol 2001 May-Jun;45(3):313-6

Opportunistic testing of medically underserved women for cervical cancer in South Africa.

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**OBJECTIVE:** To determine the yield of opportunistic Pap smears taken in an unscreened and medically underserved population in the Transkei Region of South Africa. **STUDY DESIGN:** Cross-sectional study of 22,160 cervical cytology specimens from an unscreened population attending gynecologic outpatient clinics between January 1990 and December 1996. **RESULTS:** The overall prevalence of atypical squamous cells of uncertain significance (ASCUS), low grade squamous

intraepithelial lesions (LSIL) and high grade squamous intraepithelial lesions (HSIL) was, respectively, 34.7%, 8.3% and 2.4%. The ASCUS: SIL ratio was 3:1.

The prevalence of invasive squamous cell carcinoma was 1.6%. The yield of opportunistic Pap smears was 10.7% including only LSIL and HSIL. CONCLUSION: The pathologic process of precursor lesions of cervical cancer appears to start at an early age since > 20% of cases are diagnosed before the age of 30 years. In the absence of a national screening program, opportunistic testing of medically underserved women needs to be maintained and encouraged.

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Am J Ind Med 2001  
Jun;39(6):572-80

**Occupational exposures and cancers of the endometrium and cervix uteri in Finland.**

Weiderpass E, Pukkala E, Vasama-Neuvonen K, Kauppinen T, Vainio H, Paakkulainen H, Boffetta P, Partanen T.

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BACKGROUND: Endometrial cancer incidence rates are low in Asia and Africa and high in

North America and Northern Europe. Cervical cancer is often the most common female cancer in developing countries, and infection with human papillomavirus (HPV) is its main risk factor. However, other factors, such as occupational exposures may modify the HPV-related risk. We conducted an exploratory register-linkage study in Finland to assess the role of occupational exposures on incidence rates of cancers of the endometrium and cervix uteri.

METHODS: Occupational risk factors for endometrial and cervical cancers were explored in a 25-year follow-up of female workers born 1906-1945 (N = 413,877) identified through the Population Census of Finland of 1970. Job titles in census records were converted to exposures of 31 occupational agents through a job-exposure matrix. Poisson regression models estimated relative risks (RR) for each agent, standardized for birth cohort, follow-up period, and socio-economic status. For each agent, the product of level and probability of exposure was calculated and subdivided in three categories: zero, low, and medium/high. Adjustment at the job title level was done for the turnover rate (endometrial and cervical cancers), mean parity, and age at first birth (endometrial cancer).

RESULTS: Endometrial cancer (2,833 cases) was associated with exposure to animal dust

(RR 1.2, low level, 174 cases) and sedentary work (RR 1.3, high level, 145 cases). Cervical cancer (1,101 cases) was associated with exposure to aliphatic and alicyclic (RR 1.3, low level, 91 cases), aromatic (RR 1.2, low level, 318 cases; RR 1.4, high level, 41 cases), and chlorinated hydrocarbon solvents (RR 1.3, low level, 50 cases), silica dust (RR 1.2, low level, 251 cases), and wood dust (RR 1.2, low level, 249 cases). CONCLUSIONS: This study suggests that occupational exposures may be associated with increased risk of endometrial and cervical cancers. Copyright 2001 Wiley-Liss, Inc.

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Z Morphol Anthropol  
2001;83(1):75-108

**Relationship between genetic anomalies of different levels and deviations in dermatoglyphic traits. Part 7: Dermatoglyphic peculiarities of females with cervical and endometrial carcinoma.**

Bejerano M, Yakovenko K, Katznelson MB, Kobylansky E.

Department of Anatomy and Anthropology, Sackler Faculty of Medicine, Tel Aviv University.

This study was carried out to evaluate the effects of neoplastic diseases like carcinoma of the cervix and endometrial carcinoma, and was based on

dermatoglyphic traits and their indices of intraindividual diversity (Div), fluctuating asymmetry (FIA) and directional asymmetry (DA). The results were compared with control groups of women and men, whose data have been detailed in our previous publications (Kobylansky et al., 1999 a-d), and with analogous data of additional cancer groups available in the literature, like acute leukemia, bronchial cancer and breast cancer. The general aims of the study were as follows: (a) to obtain a dermatoglyphic characterization of discrete and quantitative traits and their Div, DA, FIA values in cancer patients, compared to healthy control groups, both female and male; (b) to test the hypothesis that in cancer patients there is an increased level of FIA as a result of an impaired developmental homeostasis; (c) to explore the possibility of using DT (dermatoglyphic traits) data of CW (women with cancer) to predict the probability of the appearance of cervical and endometrial carcinoma in apparently healthy females at a young age. The sample consisted of 94 Israeli-Jewish women of various groups, of which 54 had endometrial carcinoma and 40 had cervical carcinoma. The prints were collected in the Tel-Hashomer Hospital. The control group was a sample of 874 healthy subjects, half of them male and the other female, all from Jewish communities of European extractions (50%) as

well as from Africa (50%). All controls were adults (over 18 years of age). Interpretation of prints was performed according to Cummins & Midlo (1961) and Penrose (1968) and included identification of patterns, ridge counts and the measurement of distances and angles in the palms, 79 DT for every individual were assessed. Significant differences were found for some of the studied traits between cancer patients and their healthy control groups. We encountered merely a low sexual dimorphism between the CW and the control males as compared to that between control males and females (with significant differences in 18% of the quantitative traits vs 64% in the control). The indices of diversity and asymmetry proved more suitable for discrimination, yielding the highest discrimination level between CW and control females. This finding suggested other data in the present study which points to a similarity between CW and control males.

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Trop Med Int Health 2001  
Apr;6(4):296-304

**Cancer incidence in Blantyre, Malawi 1994-1998.**

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Dzamalala CP, Liomba NG.

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Registry, Queen Elizabeth  
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Malawi.

In this paper, we report the first results from the population-based cancer registry for Blantyre district, Malawi, for the period 1994-1998. In this 5-year period, 1245 cases were recorded in males (an estimated age-standardized incidence of 92.0 per 100,000) and 1003 in females (an age standardised rate (ASR) of 88.8 per 105). The overall percentage of cases with histological verification was just 41.8%, indicating that case-finding outside the laboratory had been quite successful; nevertheless the rather low rates suggest possible underdiagnosis of cancer, as well as cases missed. As in other reports from the region, the contemporary pattern is dominated by Kaposi's sarcoma (KS) (55.2% cancers in men, 28% in women), the effect of the evolving epidemic of AIDS. The incidence of cervix cancer in women is high (ASR 26.2 per 105), and there are moderately high rates of oesophageal cancer (ASR 15.4 per 105 in men, 9.3 per 105 in women). In childhood, the cancer profile is dominated by Burkitt's lymphoma, which accounts for 42.4% of cancers; KS is now the second most frequent cancer of childhood.

J Clin Endocrinol Metab 2001  
May;86(5):2243-9

**Cyclooxygenase-2 expression and prostaglandin E(2) synthesis are up-regulated in carcinomas of the cervix: a possible autocrine/paracrine regulation of neoplastic cell function via EP2/EP4 receptors.**

Sales KJ, Katz AA, Davis M,  
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HN.

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The prevalence of cervical cancer in South African women is reported as being the highest in the world, occurring, on the average, in 60 of every 100,000 women. Cervical cancer is thus considered an important clinical problem in sub-Saharan AFRICA: Recent studies have suggested that epithelial tumors may be regulated by cyclooxygenase (COX) enzyme products. The purpose of this study was to determine whether cyclooxygenase-2 (COX-2) expression and PGE(2) synthesis are up-regulated in cervical cancers. Real-time quantitative RT-PCR and Western blot analysis confirmed COX-2 ribonucleic acid and protein expression in all cases of squamous cell carcinoma (n = 8)

and adenocarcinoma (n = 2) investigated. In contrast, minimal expression of COX-2 was detected in histologically normal cervix (n = 5). Immunohistochemical analyses localized COX-2 expression and PGE(2) synthesis to neoplastic epithelial cells of all squamous cell (n = 10) and adenocarcinomas (n = 10) studied. Immunoreactive COX-2 and PGE(2) were also colocalized to endothelial cells lining the microvasculature. Minimal COX-2 and PGE(2) immunoreactivity were detected in normal cervix (n = 5). To establish whether PGE(2) has an autocrine/paracrine effect in cervical carcinomas, we investigated the expression of two subtypes of PGE(2) receptors, namely EP2 and EP4, by real-time quantitative RT-PCR. Expression of EP2 and EP4 receptors was significantly higher in carcinoma tissue (n = 8) than in histologically normal cervix (n = 5; P < 0.01). Finally, the functionality of the EP2/EP4 receptors was assessed by investigating camp generation after in vitro culture of cervical cancer biopsies and normal cervix in the presence or absence of 300 nmol/L PGE(2). cAMP production was detected in all carcinoma tissue after treatment with exogenous PGE(2) and was significantly higher in carcinoma tissue (n = 7) than in normal cervix (n = 5; P < 0.05). The fold induction of cAMP in response to PGE(2) was 51.1 +/- 12.3 in cervical carcinoma tissue

compared with 5.8 +/- 2.74 in normal cervix. These results confirm that COX-2, EP2, and EP4 expression and PGE(2) synthesis are up-regulated in cervical cancer tissue and suggest that PGE(2) may regulate neoplastic cell function in cervical carcinoma in an autocrine/paracrine manner via the EP2/EP4 receptors.

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Int J Cancer 2001 Jun  
1;92(5):622-7

**A case-control study of human immunodeficiency virus infection and cancer in adults and children residing in Kampala, Uganda.**

Newton R, Ziegler J, Beral V, Mbidde E, Carpenter L, Wabinga H, Mbulaiteye S, Appleby P, Reeves G, Jaffe H; Uganda Kaposi's Sarcoma Study Group.

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Uganda offers a unique setting in which to study the effect of human immunodeficiency virus-1 (HIV-1) on cancer. HIV-1 is prevalent there, and cancers which are known to be HIV-associated, such as Kaposi's sarcoma and Burkitt's lymphoma, are endemic. Adults residing in Kampala, Uganda, presenting with cancer in city

hospitals were interviewed and had an HIV test. Of the 302 adults recruited, 190 had cancers with a potentially infectious aetiology (cases). The remaining 112 adults with tumours not known to have an infectious aetiology formed the control group. In addition, 318 children who were also Kampala residents were recruited and tested for HIV: 128 with cancer (cases) and 190 with non-malignant conditions (controls). HIV seroprevalence was 24% in adult controls and 6% in childhood controls. The odds of HIV seropositivity among cases with specific cancers (other than Kaposi's sarcoma in adults) were compared with that among controls, using odds ratios (ORs), estimated with unconditional logistic regression. All ORs were adjusted for age (<5, 5-14, 15-19, 30-44, 45+) and sex and, in adults, also for the number of lifetime sexual partners (1 or 2, 3-9, 10+). In adults, HIV infection was associated with a significantly ( $p < 0.05$ ) increased risk of non-Hodgkin's lymphoma [OR = 6.2, 95% confidence interval (CI) 1.9-19.9, based on 21 cases] and conjunctival squamous-cell carcinoma (OR = 10.9, 95% CI 3.1-37.7, based on 22 cases) but not with cancer at other common sites, including liver and uterine cervix. In children, HIV infection was associated with a significantly increased risk of Kaposi's sarcoma (OR = 94.9, 95% CI 28.5-315.3, based on 36 cases) and Burkitt's lymphoma

(OR = 7.5, 95% CI 2.8-20.1, based on 33 cases) but not with other cancers. The pattern of HIV-associated cancers in Uganda is broadly similar to that described elsewhere, but the relative frequency of specific cancers, such as conjunctival carcinoma, in HIV-infected people differs. Copyright 2001 Wiley-Liss, Inc.

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Br J Cancer 2001 May  
4;84(9):1207-14

**Cancer in the Gambia: 1988-97.**

Bah E, Parkin DM, Hall AJ, Jack AD, Whittle H.

International Agency for Research on Cancer, c/o The Gambia Hepatitis Intervention Study, MRC Laboratories, Fajara PO. Box 273, Banjul, The Gambia.

We describe the incidence of cancer in The Gambia over a 10-year period using data collected through the Gambian National Cancer Registry. Major problems involved with cancer registration in a developing country, specifically in Africa are discussed. The data accumulated show a low overall rate of cancer incidence compared to more developed parts of the world. The overall age standardized incidence rates (ASR) were 61.0 and 55.7 per 100 000 for males and females, respectively. In

males, liver cancer was most frequent, comprising 58% of cases (ASR 35.7) followed by non-Hodgkin lymphoma, 5.4% (ASR 2.4), lung 4.0%, (ASR 2.8) and prostate 3.3% (ASR 2.5) cancers. The most frequent cancers in females were cervix uteri 34.0% (ASR 18.9), liver 19.4% (ASR 11.2), breast 9.2% (ASR 5.5) and ovary 3.2% (ASR 1.6). The data indicate that cancers of the liver and cervix are the most prevalent cancers, and are likely to be due to infectious agents. It is hoped that immunization of children under 1 year against hepatitis B will drastically reduce the incidence of liver cancer in The Gambia. Copyright 2001 Cancer Research Campaign  
<http://www.bjcancer.com>.

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Tunis Med 2001 Jan;79(1):47-50

**[Hysterectomies in tropical zones: experience of one African maternal health service. 141 cases in Burkina Faso].**

[Article in French]

Dao B, Toure B, Sano D, Bambara M, Koalaga A, Da E, Bazie AJ.

Maternite du Centre Hospitalier National Souro Sanou. (C.H.N.S.S), B. P. 676 Bobo Dioulasso, Burkina Faso. We conducted a retrospective study of all hysterectomies



performed in our setting over a two year period (1995-1996). The objective was double: define the indications and precise the outcome. A total of 141 cases were recorded. The main characteristics of the patients were the following: a mean age of 38 years, mean gravidity and parity of 5 and an average number of living children of 3. Hysterectomy was performed by the abdominal route in 86.52% of the cases. The main indications were: uterine rupture (39.71%), uterine myoma (25.53%), genital prolapse (19.89%) and cervix cancer (7.09%). Adnexectomy was associated in 51 cases and it was bilateral in 22 cases. The following complications occurred: 5 deaths, 8 wound abcess, 2 bladder injury, 1 ureter injury and 1 case of post-operative hemorrhagea.

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Semin Oncol 2001  
Apr;28(2):198-206

**Acquired immunodeficiency syndrome-associated cancers in Sub-Saharan Africa.**

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Sub-Saharan Africa is considered home to more than 60% of all human immunodeficiency virus

(HIV) infected cases, with an estimated adult prevalence of 8.0%. It is stated that this region has contributed more than 90% of childhood deaths related to HIV infection and about 93% of childhood acquired immunodeficiency syndrome (AIDS)-related deaths. Although no country in Africa is spared of the infection, the bulk is seen in East and South Africa, with the highest recorded rates of 20% to 50% in Zimbabwe. On the other hand, West Africa is less affected, while countries in Central Africa have relatively stable infection rates. Although infections, especially tuberculosis, have emerged as the most important HIV/AIDS-associated killers in recent times, AIDS-associated malignancies are increasingly identified in the late stages. As a result of incomplete data from African countries, it is unclear whether the epidemiology and risks of these cancers are the same as observed in the developed countries.

Since the advent of AIDS, epidemic Kaposi's sarcoma (KS) has become more common in both sexes in Africa, with a dramatic lowering of the male to female ratio from 19:1 to 1.7:1, especially in East Africa. Although there has been a rising trend of AIDS-associated non-Hodgkin's lymphoma (NHL) worldwide, there is an apparently lower risk in Africa compared with that in the developing world. At present, there is no

strong evidence linking increased incidence of invasive cervical cancer to the HIV epidemic; however, some studies have demonstrated an association between HIV and the increased prevalence of human papilloma virus (HPV) and cervical intraepithelial neoplasia (CIN). On the other hand, HIV infection is now established as a risk factor for the development of squamous cell neoplasia of the conjunctiva based on studies from Rwanda, Malawi, and Uganda. Despite the problems and limitations of information from sub-Saharan Africa, interesting trends of HIV/AIDS-related cancers have emerged from comparison of available data. Semin Oncol 28:198-206.

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Bull World Health Organ  
2001;79(2):127-32

**Situation analysis for cervical cancer diagnosis and treatment in east, central and southern African countries.**

Chirenje ZM, Rusakaniko S, Kirumbi L, Ngwalle EW, Makuta-Tlebere P, Kaggwa S, Mpanju-Shumbusho W, Makoa L.

Department of Obstetrics & Gynaecology, University of Zimbabwe, PO Box A178, Avondale, Harare, Zimbabwe.

OBJECTIVE: To determine the factors influencing cervical

cancer diagnosis and treatment in countries of East, Central and Southern Africa (ECSA). METHODS: Data were collected from randomly selected primary health care centres, district and provincial hospitals, and tertiary hospitals in each participating country.

Health care workers were interviewed, using a questionnaire; the facilities for screening, diagnosing, and treating cervical cancer in each institution were recorded, using a previously designed checklist. FINDINGS: Although 95% of institutions at all health care levels in ECSA countries had the basic infrastructure to carry out cervical cytology screening, only a small percentage of women were actually screened. Lack of policy guidelines, infrequent supply of basic materials, and a lack of suitable qualified staff were the most common reasons reported. CONCLUSIONS: This study demonstrates that there is an urgent need for more investment in the diagnosis and treatment of cervical cancer in ECSA countries. In these, and other countries with low resources, suitable screening programmes should be established.

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Gynecol Obstet Fertil 2001  
Jan;29(1):15-20

**[Precancerous lesions of the uterine cervix in cameroonian women. Cytological and**

epidemiological aspects of 946 cases].

Nkegoum B, Belley Priso E, Mbakop A, Gwent Bell E.

[Article in French]

Service d'anatomie pathologique, Hôpital central et Hôpital général de Yaounde, BP 2787, Yaounde, Cameroun.

**OBJECTIVE:** The aim of this study was to present the cytological and epidemiological aspects of precancerous lesions of the uterine cervix of women living in the two first cameroonian cities (Yaounde and Doubla). **MATERIAL AND METHODS:** The material was made of pap smears registrar of the Yaounde Central Hospital pathological laboratory and the reports of cervical cancer screening from Douala and Yaounde within a period of five years (1st January 1994 to 31<sup>st</sup> December 1998). We recruited all cases showing a precancerous lesion of the uterine cervix. For each case, we noted: the type of lesion, the age of the patient, the age at the first sexual intercourse, the age at the first delivery, the number of pregnancies, the parity, the marital status, the socioeconomic class. **RESULTS:** From a total of 13524 pap smears done, 946 (7%) have shown precancerous lesions. 70% of these were high grade while 30% were low grade. These lesions were

observed at all age from the range of 11 to 15 years. All women showing these lesions had had sexual intercourse. 30% of these lesions were noted among women who have had their first sexual intercourses between 10 and 15 years. 40% were observed among women who have had their first sexual intercourses between 16 and 18 years. 66% among women who have had their first delivery between 13 and 21 years. 92% are observed among women who have had more than five pregnancies, more than five parities; 54% among women who are married and 76% among bachelors and widows; 64% among women with low socioeconomic status; 9% among women with high socioeconomic status. **CONCLUSION:** Many cameroonian women are prone to cervical cancer.

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Int Clin Psychopharmacol 2000 Nov;15 Suppl 3:S47-9

**Quality of life in cancer of the cervix patients.**

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Cancer of the cervix is one of the leading causes of death among female cancer patients in

developing countries such as South Africa. Despite this, psychiatric morbidity, including impairment of quality of life, has not been well studied in such patients in this context. A total of 328 Zulu-speaking patients with cervical cancer were interviewed with a structured diagnostic instrument and with a quality of life measure (Quality of Life Index). Quality of life scores were numerically lower than published norms, and lower scores were associated with inpatient status, more advanced stage of the disease, lower Karnofsky physical performance scores, comorbid psychiatric disorder, and lower 'fighting spirit' and more 'helplessness/hopelessness'. The Quality of Life Index is a valuable instrument that can be used by clinicians in order to assess the negative impact of the

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Tunis Med 2000 Oct;78(10):557-61

**[Cost effectiveness of cervical cancer screening strategies in Tunisia].**

[Article in French]

Hsairi M, Fakhfakh R, Ghyoula M, Ben Abdallah M, Achour N.

Institut Salah Azaiez, Tunis.  
Cervical cancer is a public health problem in developing countries and is the first cancer among

women in several of these countries. Screening using the Pap test is the principle control strategy for this cancer. The aim of this study is to identify the highest cost-effectiveness strategy of Pap test screening, according to age group (20-64 years, 35-64 years and 40-64 years) and the frequency of this test (every 3 years or every 5 years). Number of cases avoid by screening and mean cost to prevent one case were used to compare these screening strategies. The principles results showed that the number of cervical cancer cases avoid increase with the coverage level of the screening and age group size, and decrease with the frequency of the Pap tests. The screening strategy interesting age group "40-64 years" every 5 years observed the highest cost-effectiveness ratio (19 MD); however cost is 23 MD for age group 35-64 years. These results lead to choice a frequency of Pap tests every 5 years. However, for determination of age group, other factors, as psycho-social ones, should be taken into account besides economic criterias.

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Tunis Med 2000 Aug-Sep;78(8-9):508-11

[Evaluation of the frequency of oncogenic HPV in venereal condyloma. Prospective study of 24 patients].

[Article in French]

Kharfi M, Slim A, Mokhtar I, Arrouji Z, Ben Halima M, Zghal M, Ben Rejeb S, Kamoun MR.

Service de Dermatologie, Hôpital Charles Nicolle, Tunis.

Human papillomavirus (HPV) infection tend to be the most prevalent sexually transmitted disease (STD), and "high-risk" HPV types are correlated to intra-epithelial neoplasia, especially cervical cancer. The aim of this study was to evaluate the frequency of "high risk" HPV types in condyloma. **PATIENTS AND METHODS:** A non randomised prospective study was performed, including 24 patients with condyloma examined in the department of Dermatology of Charles Nicolle's hospital. Molecular hybridisation method was realised for all patients to identify HPV type. **RESULTS:** Mean age of the 24 patients was 37.8 years Ratio (male/female): 1.4 In 21 patients HPV DNA was detected 2 women had "high risk" HPV type (9.5%).

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Int J Gynaecol Obstet 2001 Feb;72(2):151-7

**Screening for cervical neoplasia in a developing country utilizing cytology, cervicography and the acetic acid test.**

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**OBJECTIVE:** To compare three screening tests for cervical neoplasia. **METHOD:** Women (6301) were screened simultaneously with cytology, cervicography and the acetic acid test (AAT). Biopsies were taken from the acetowhite lesions and every fifth seemingly normal cervix. Positive cases (both at screening and histology) were referred for colposcopy. The histology results served as the golden standard. **RESULTS:** Cytology was positive in 1.7% of cases, cervicography in 10.7% and the AAT in 17.8%. The sensitivity of cytology was 19.3%, of cervicography 41.8% and the AAT 49.4%. Corresponding specificities were 99.3%, 78.8% and 48.5%. In 23% of biopsies showing cervical intraepithelial neoplasia (grade I-III), all three screening tests were negative. By combining the three tests, a sensitivity of 76.9% was achieved. **CONCLUSION:** The sensitivity of cytology alone is not great enough for implementing as a screening test in a developing country where screening programs are often inadequate. Screening with a combination of tests, once or a

few times per woman's life, is a more acceptable alternative since it allows for less screening events without sacrificing sensitivity.

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Int J Gynaecol Obstet 2001 Jan;72(1):47-53

**Adjunctive testing for cervical cancer in low resource settings with visual inspection, HPV, and the Pap smear.**

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**OBJECTIVE:** To test whether the performance of visual inspection using acetic acid (VIA) could be improved through adjunctive testing and to determine whether the combination of visual inspection of the cervix and HPV testing could prove useful for identifying those at highest risk of cervical precancer. **METHODS:** Between October 1995 and August 1997, 2199 women willing to be screened for cervical cancer in peri-urban clinics in Harare, Zimbabwe received VIA, Pap smear and HPV as screening tests. The presence or absence of (pre)cancer was confirmed via

colposcopy with biopsy as indicated for >97% of all women. Computerized simulations of sequential testing scenarios provided estimates of the joint (net) test qualities of different paired combinations of the three tests and allowed for comparisons with the individual test qualities. **RESULTS:** Using HGSIL/CIN II-III as the reference threshold of disease, the net sensitivity and specificity of VIA and HPV when used sequentially were 63.6 and 81.9%, respectively, compared to 43.3 and 91%, respectively, when Pap smears were followed by HPV testing. VIA followed by the Pap smear yielded a net sensitivity of 37.5% and net specificity of 94.3%.

**CONCLUSIONS:** For programs with limited resources but with the capacity for HPV testing, sequential testing involving the use of VIA followed by HPV could yield fewer false positives than the use of VIA alone at a cost of relatively few additional false negatives.

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J Clin Virol 2000 Oct;19(1-2):31-41

**The uganda study on HPV variants and genital cancers.**

Buonaguro FM, Tomesello ML, Salatiello I, Okong P, Buonaguro L, Beth-Giraldo E, Biryahwaho B, Sempala SD, Giraldo G.

Division of Viral Oncology and AIDS Reference Center, Ist. Naz. Tumori 'Fond. G. Pascale', Napoli, Italy.

**BACKGROUND:** Genital cancers in Uganda have been the most frequently diagnosed cancer in men as well as in women since the 1950s. Genetic studies have detected HPV-16 variants of Afl class and identified a new sub-class designated Afl-u.

**OBJECTIVES:** The main goal of this study is to analyze the prevalence of HPV strains and HPV variants in anogenital lesions of Ugandan male and female subjects in order to possibly determine their role in the pathogenesis of such lesions and to develop an Ugandan preventive HPV vaccine program.

**STUDY DESIGN:** The study is planning to enroll male and female subjects affected by genital lesions, in particular to collect 200 scrapes/biopsies from women with normal ectocervical epithelium as well as with all different degrees of ectocervical lesions (from CIN 1/LSIL to cervical carcinoma). All samples are analyzed by PCR amplification of the L1 conserved region (nt 6584-7035) and the E6/E7 genes (nt34-880), nucleotide sequence analysis, homology and phylogenetic studies. Variant distribution studies will be followed by

serological studies of prevalence and incidence in 1000 women.

**PRELIMINARY RESULTS AND CONCLUSIONS:** Penile cancers from the Kyadondo County have been analyzed for the presence of HPV sequences. More recently 16 ectocervical scrapes and three biopsies have been received from women attending the Nsambya Hospital and analyzed for the presence and type of HPVs. Our results, obtained by PCR and sequencing analysis, allowed the identification of HPV-16 Afl sequences in 100% of tumor tissue and in 6.25% of scrapes. HPV 45 was identified only in one tumor together with HPV 16 infection. HPV 33 and HPV 58 were present in 20% and 40%, respectively of HPV positive benign samples. The results are showing a narrowing of the HPV pattern in more advanced lesions, suggesting that mainly HPV-16 Afl patients are progressing to cancer.

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Int J Cancer 2000 Nov 1;88(3):489-92

#### The spectrum of HIV-1 related cancers in South Africa.

Sitas F, Pacella-Norman R, Carrara H, Patel M, Ruff P, Sur R, Jentsch U, Hale M, Rowji P, Saffer D, Connor M, Bull D, Newton R, Beral V.

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Despite the high prevalence of infection by the Human Immunodeficiency Virus (HIV) in South Africa, information on its association with cancer is sparse. Our study was carried out to examine the relationship between HIV and a number of cancer types or sites that are common in South Africa. A total of 4,883 subjects, presenting with a cancer or cardiovascular disease at the 3 tertiary referral hospitals in Johannesburg, were interviewed and had blood tested for HIV. Odds ratios associated with HIV infection were calculated by using unconditional logistic regression models for 16 major cancer types where data was available for 50 or more patients. In the comparison group, the prevalence of HIV infection was 8.3% in males and 9.1% in females. Significant excess risks associated with HIV infection were found for Kaposi's sarcoma (OR=21.9, 95% CI=12.5-38.6), non-Hodgkin lymphoma (OR=5.0, 95%CI=2.7-9.5), vulval cancer (OR=4.8, 95%CI=1.9-12.2) and cervical cancer (OR= 1.6, 95%CI= 1.1-2.3) but not for any of the other major cancer types examined, including Hodgkin disease, multiple myeloma and lung cancer. In Johannesburg, South Africa, HIV

infection was associated with significantly increased risks of Kaposi's sarcoma, non-Hodgkin lymphoma and cancers of the cervix and the vulva. The relative risks for Kaposi's sarcoma and non-Hodgkin lymphoma associated with HIV infection were substantially lower than those found in the West.

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BJOG 2000 Sep;107(9):1164-5

The p53 codon 72 polymorphism in black South African women and the risk of cervical cancer.

Pegoraro R, Moodley J, Naiker S, Lanning P, Rom L.

Department of Chemical Pathology, University of Natal Medical School, Durban, South Africa.

The p53 codon 72 genotype was examined in blood samples taken from 121 Zulu-speaking black South African women with histologically proven squamous carcinoma of the cervix. Freshly biopsied tumour tissue was also available for human papillomavirus subtyping from 100 of these women. A control group consisted of 251 healthy race-matched women attending a contraceptive service facility. The results show that there were no statistically significant differences in the frequency of the homozygous arginine

## **SUPPORTING ORPHANS AND VULNERABLE CHILDREN IN ZAMBIA**

*Sexual Health Exchange 2001-1*

*Elizabeth Mataka*

The HIV/AIDS epidemic continues to escalate well into its second decade, especially in sub-Saharan Africa. The physical consequences for the infected individuals remain visible, but increasingly AIDS is impacting on families and communities, especially children who are affected in a variety of ways. One of the most recently recognised crisis attendant to the HIV/AIDS epidemic is the growing number of orphans. In Zambia, given the primacy of heterosexual transmission in the spread of the virus, many children will lose both parents. The Ministry of Health estimates the number of orphans in Zambia will reach more than one million by 2010. Extended families are under unprecedented strain as they employ traditional mechanisms to cope with large numbers of orphans and vulnerable children, against a background of reduced resources, because the most productive family members have died of AIDS.

### **Changing family structure**

Zambia is experiencing a change in family structures, with an increase in the number of female-headed households. In 1990, the central statistical office reported that males headed 83% of the households; in 1996 the percentage dropped to 77%. Female-headed household are disadvantaged in the allocation of resources for a variety of reasons such as property grabbing by relatives, lack of access to credit, land and other means of production.

The increase in the level of female-headed households with limited means of production is resulting in reduced food security and other socio-economic disadvantages that are compounded by the presence of "foster" children who must be catered for. The 1996 Demographic Health Survey reported that 25% of Zambian households contain a foster child or children. Additionally, an increasing number of grandparents are being left to care for orphans and have become heads of households; a similar incidence of child-headed families is beginning to emerge. The number of street kids is on the increase and potentially, a large army of untrained, unemployed and unemployable people is bound to increase with the attendant social problems associated with high unemployment levels coupled with increased child labour, as orphans find ways to survive. Additionally, these unfavourable conditions are very conducive to child sexual and other forms of abuse.

### **The Children in Distress Project**

Family Health Trust (FHT) is a non-governmental organisation established in 1987 to contribute to the prevention and control of the further spread of

HIV, and to facilitate the provision of care and support to those affected. The Trust is the umbrella organisation of three specialised AIDS-related projects, namely: Anti-AIDS Project (AAP), Lusaka Home Based Care (LHBC) Project and Children in Distress (CINDI) Project.

The goal of the Children in Distress (CINDI) Project is to mitigate the impact of the HIV/AIDS epidemic on orphans and other vulnerable children in Zambia through mobilising, scaling up and strengthening community-led responses and programmes.

### **CINDI's conceptual framework is based on three premises.**

The first is recognition of the role of households in the care and support of orphans and other vulnerable children affected by HIV/AIDS and other causes. Many of the households that have taken in vulnerable children may need help as they struggle to cope with added demands for food, health, housing, education and general livelihood. To build households' capacities to care for vulnerable children and not compromise their security, CINDI's interventions must address all of a household's basic needs.

The second premise is that while national policy development and support are essential, the actual response to the situation of orphaned children must come from the community, to ensure sustainability and relevance to local situations.

The third premise is the importance of building upon and expanding the effectiveness and efficiency of local and community-led responses. CINDI works with communities to step up their mobilisation and capacity building to maintain the children in their communities. Communities play a critical role in the children's socialisation and internalisation of the communities' norms and values.

### **Mobilising and strengthening communities**

Community mobilisation is critical in the response to the maintenance and support of orphans and other vulnerable children. CINDI works with communities to identify and define what constitutes vulnerability in their own situation, and through mapping, communities can identify how they can respond to this vulnerability. Communities may contribute in a variety of ways, but most contribute labour and other services to support the most vulnerable. For example, villagers in CINDI project areas contribute their labour to build and maintain village houses for elderly grandparents looking after orphans, and also set aside time to cultivate their land during the planting season. Mostly, communities can only contribute labour for agriculture, because they themselves are financially stressed and CINDI supports these initiatives by sourcing funds for agricultural inputs – seed and fertiliser. Some community activities raise funds to support the needs of

orphans and vulnerable children; these are mainly income-generating vegetable gardens like the one in Katete in Eastern Province that supports 714 orphans in a feeding programme and provides funds to meet other basic needs.

For a community to build its capacity, it must be able to identify areas where it is weak or ineffective in evaluating its responses to children in need. CINDI trains communities in areas such as record keeping, financial accountability, report and project proposal writing and simple business management skills. This training and transfer of skills is useful to individuals as well in their role as income generators for their own families, and it provides a substantial degree of motivation for people.

Additionally, CINDI continues to build up communities' abilities to strengthen advocacy with local authorities for orphans and vulnerable children in issues of access to education. One rural community, for example, succeeded in getting some 700 orphans exempted from paying school fees. An urban community won concessions for 1000 orphans from paying other education-related costs. CINDI branches have successfully lobbied for the orphans to be exempted from medical fees in health institutions; this is particularly successful in rural areas.

#### **Protecting the children**

CINDI is also concerned about certain cultural practices and beliefs that violate the Rights of Children, especially the girl-child. It is working with chiefs, headmen and other leaders to sensitise communities about these violations and to address these problems within themselves. CINDI held workshops with chiefs, village headmen, traditional birth attendants, school and medical authorities to sensitise these leaders on such issues as forcing young girls into early marriages and to reduce the incidence of men having sex with young virgins in order to cleanse themselves of HIV infection. This belief is widely held by people who do not have adequate knowledge on the transmission of HIV.

Another area of concern is the practice of confining young girls and isolating them from society, including schools, for periods of up to three months upon attaining maturity (onset of menstruation) for cultural instruction into womanhood. This practice is common in the Eastern Province and disadvantages young girls in respect of their educational advancement as well as robbing them of their childhood.

The need to work with communities with regards to matters pertaining to the rights of the girl-child cannot be over-emphasised, including the right to participate in HIV/AIDS prevention programmes. A study by the Anti-AIDS Project of the Family Health Trust revealed that attendance at Anti-AIDS Clubs activities was only 35% girls and 65% boys, the girls being kept at

home to perform household chores. Work is being done with parent/teachers associations to address this gender disadvantage.

CINDI believes in empowering orphans and vulnerable children and households. It is committed to facilitating seed money for their economic empowerment, training them in life skills to develop assertiveness and confidence and educating them on HIV/AIDS prevention to minimise their risk of infection, thus breaking the circle of disadvantage, poverty and AIDS. CINDI gives credit to communities and individuals who try to mitigate the negative impact of HIV/AIDS on orphans, in spite of their own fight for survival under the present economic hardships in the country.

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## TEACHER PRODUCTIVITY

Ministry of Education officials also observe that teacher posting has become more difficult. The records show that trained teachers are concentrated in urban areas while rural schools are denied their full and fair complement. What the records do not show is that illness, much of it AIDS-related, is a major contributing factor to this situation. There has been a steady increase in the number of chronically sick teachers who, on medical grounds, must be posted near to hospitals, properly staffed clinics or medical centres.

This means that they must live in or near towns, but not in remote rural areas. The urban posting of these teachers does little, of course, for the work in the urban schools, since many are too ill to assume a full teaching load or to guarantee some continuity in their teaching. Reports from school authorities and from communities speak of loss of teaching time due to the prolonged illness of teachers or to their erratic attendance (Milimo, 1998).

Communities see this as one of the factors contributing to a decline in the quality of education (and consequently, to a reduction in their preparedness to commit the time of their children to school). With an expected 12 to 14 AIDS-related sickness episodes occurring before the terminal illness, the contribution of many teachers to what goes on in schools becomes progressively more episodic until in the end it peters away.

## TEACHER COSTS

Apart from distributional issues, this wasting loss of serving teachers has grave financial repercussions on the education system. As part of its structural adjustment programme, Zambia is seeking, through a Public Sector Reform Programme, to reduce the size of its public sector.

Teachers constitute the largest single group in this sector. But since they cannot be severed from service while they are ill, the system must currently carry an unknown but large number of non-productive persons. In addition to the high costs this implies, the picture is so blurred that rational planning for teacher numbers is extremely difficult. In addition, the mortality of so many young qualified teachers represents a great national loss in terms of their earlier training at public expense, to say nothing of the experience they will have gathered in the years when they were teaching.

## TEACHER STRESS

Teachers are also deeply affected personally by the incidence of HIV/AIDS among their relatives and colleagues. Though this is a major cause of concern for them, it is an area in which they receive little support. Thus, it has been found that less than one-third of a sample of teachers who had experienced AIDS sickness or death among their relatives had talked about the problem with friends or relatives (UNICEF, 1996). The remainder felt either unable or unwilling to do so.

The unresolved HIV-related stresses which teachers experience, in the classroom and at home, need to be acknowledged in initial and ongoing teacher training. Recognising the magnitude of this personal problem, the Zambian Ministry of Education proposes to introduce HIV/AIDS counselling for teachers and other education personnel and to integrate HIV/AIDS awareness into its in-service training programmes (MOE, 1996, pp. 76-77).

At the macro-level, AIDS will have the long-term effect of there being fewer pupils to educate.

## IMPACT ON PUPILS AND SCHOOL ENROLMENTS

At the macro-level, AIDS will have the long-term effect of there being fewer pupils to educate. Zambia's total population is projected to reach 11.5 million in 2010, having lost 4.2 million persons to AIDS (Hunter & Williamson, 1997, Figure A-1). This loss will be because of large increases in adult and child mortality, a lower fertility rate, and some reduction in births because of the premature death of women in their child-bearing years.

The possibility exists that infant and child mortality rates, already very high, may increase dramatically—the infant rate doubling and the child rate tripling (ibid., p. 9). This demographic development will reduce the number of pupils of primary school age.

Projections are that the population aged 15 and below will reach 5.4 million in 2010, instead of the 6.8 million it might have attained if the incidence of AIDS had been less widespread (Hunter & Fall, 1998, p. 14; CSO 1995).

Apart from distributional issues, this wasting loss of serving teachers has grave financial repercussions on the education system. Ironically, with 750,000 to one million fewer than expected children of primary school age, Zambia's task of achieving universal primary education will become easier, but this gain will have been bought at very high human and other costs.

Since the early 1990s Zambia has been experiencing stagnation, and at times even decline, in

**With AIDS in the family, either there was no longer a source of regular income or whatever income was coming in was diverted to palliative care of the sick person.**

primary school enrolments. This has been happening at a time when the number of school-aged children is increasing, when the number of children not attending school is already very large, and when school facilities are not being used to the full.

This decline in school participation rates is attributed mostly to poverty and to parental disillusion with the low quality of education which the schools provide. Although no rigorous studies have been conducted, it seems likely that some of the decline in demand is also due to AIDS, and to the impact this is having on poverty, on levels of employment, and on the quality of school provision.

### THE SITUATION OF ORPHANS

Some evidence comes from micro-studies into the situation of orphans. A study in the Copperbelt—one of the regions in Zambia most badly affected by AIDS—found that 44% of the children of school-going age were not attending school, but with proportionately more orphans (53.6%) than non-orphans (42.4%) not attending (Rossi & Reijer 1995). All of these figures depart significantly from the Copperbelt's overall primary school attendance rate of 79%.

Something similar was found in a rural area in the Eastern Province, where only 38% of the orphaned children of school-going age were attending school, compared with the provincial average of 51% (Katete Hospital, 1994). More recently it was found that 32 percent of urban and 68 percent of rural orphans were not enrolled in school. These percentages are considerably higher than those for non-orphans who were not enrolled—25% of urban non-orphans and 48 percent of rural non-orphans. (UNICEF, 1999).

### PROMINENT FEATURES OF THE FINDINGS

Two features stand out from these findings. One is the very low overall level of school participation. The studies found that the principal reason for this was inability to pay school costs. For many of the affected children this inability was AIDS-related. It occurred because, with AIDS in the family, either there was no longer a source of regular income or whatever income was coming in was diverted to palliative care of the sick person.

This is confirmed by interviews with Lusaka teachers, every one of whom had had in their classes pupils whose parents died of AIDS. All reported that, following the death of the parent, the pupils stopped attending because of school fees and the costs of school requisites (UNICEF, 1996).

The second feature is the extensive difference in attendance rates between orphans and non-orphans. Given the close link in these particular studies between AIDS and orphanhood, it seems clear that one major impact of AIDS on pupils of school-going age is to reduce the likelihood of their school attendance.

Further evidence comes from a study of two high density areas in Lusaka, which found that of 1,359 children, aged 18 and below, 67% had lost one or both parents (Webb, 1996). Some 7% of these had dropped out of school in the twelve months prior to the study. The same year, the drop-out rate for urban primary schools in Lusaka was 1.7%. Thus, orphans, mostly those from families affected by AIDS, appear to be at greater risk than non-orphans of dropping out of school.

### IMPACT ON DEMAND FOR EDUCATION

The adverse impact of HIV/AIDS on demand for education also surfaces in a report from a remote northern area where the community has been so extensively ravaged by AIDS that it has migrated to other areas, in the hope of leaving the fatal disease behind. This has led to uncertainty about the continued need for one school, as well as to some increase in the pressure on the schools in the places where the affected families have settled.

To sum up, HIV/AIDS affects the demand for education because:

- there will be fewer children to educate;
- fewer children will be able to afford the costs of education;
- for social and economic reasons, more children will drop out of school without completing the normal primary school cycle.

It also seems likely that fewer children will want to be educated, partly because of the traumas they have suffered through the experience of AIDS in their families, partly because they have to work to generate income for family support or are needed to care either for the sick or for younger siblings. Heart and hope have gone out of many of them. They see little value in education as a way of surmounting their problems. They are so overwhelmed by these that they have lost interest in getting a formal school education.



## IMPACTS ON THE CONTENT, PROCESS AND ROLE OF EDUCATION

HIV/AIDS has been documented as having other impacts on education in Zambia. One is in the area of curriculum. The most obvious instance is the inclusion of AIDS education with a view to bringing about behaviour change.

### CONTENT OF EDUCATION

The Zambian Ministry of Education recognises the importance of education and the formation of attitudes in relation to HIV/AIDS. Consequently its policy is to ensure close attention to this matter through health education programmes, the development of life-skills, sexuality and personal relationship programmes, and Anti-AIDS clubs in schools (MOE, 1996, p.77).

The Anti-AIDS clubs which have been established in a large number of schools across the country, and which have their own bi-monthly newspaper, are spearheading an awareness movement which is gradually reaching out to every pupil in the country.

Given its current embattled AIDS situation, Zambia considers this development as being of crucial importance. Consequently, it is with some surprise that one notes the Damage limitation appears to attract greater attention than damage prevention.

relatively low-key presentation of this approach in the World Bank's policy research report *Confronting AIDS*. Although the report does acknowledge that "HIV/AIDS.

**"HIV/AIDS education is likely to be a good investment in preventing HIV".**

education is likely to be a good investment in preventing HIV" (World Bank, 1997, p. 149), it goes to greater lengths in dealing with risky sexual and injecting behaviour and with prevention programmes for sub-populations that are at greatest risk.

While it is important to deal with these areas, it is regrettable that the report does not pay comparable attention to the one window of hope that exists for the worst-affected countries, the children in primary school who have not yet been infected. Damage limitation appears to attract greater attention than damage prevention.

## PROCESS OF EDUCATION

AIDS has also affected the process of education in Zambia through its impact on social interactions arising from the presence of HIV-infected individuals in schools. Some rural communities have accused teachers of being responsible for the introduction and spread of HIV/AIDS (Milimo, 1998).

This has led to strained teacher-community relationships, in some instances undermining the likelihood of adequate community participation in school affairs. At a different level, because they are believed to be HIV-free, young girls run an increased risk of sexual harassment on their way to and from school. This has led to isolated cases of such girls being withdrawn from school, and to pressure from parents for schools closer to their homes.

### ROLE OF EDUCATION

There is also evidence that the role of the school is changing because of HIV/AIDS. Traditionally, there were very high expectations that schools would educate the whole child across the broad spectrum of the intellectual, social, moral, aesthetic, cultural, physical and spiritual domains. In practice, most schools find this impossible. Instead, they concentrate on only a few of these areas, and give the greatest emphasis in their curriculum to intellectual development (Beare, Caldwell & Millikan, 1989). But the intrusion of HIV/AIDS necessitates psychological support for the children from affected families.

Teachers find that increasingly they are being called upon to counsel their pupils and help them deal with the stresses arising from HIV/AIDS in their families. Studies on orphans have identified the need to help children express their feelings in appropriate ways and the need for those working with children to be able to adopt suitable communication and counselling roles (Colling & Sims, 1996).

In Zambia, programmes in counselling are being established in the universities and some teacher training institutions. The need is being increasingly perceived for teachers who can stand by children who are affected.

**Teachers find that increasingly they are being called upon to counsel their pupils and help them deal with the stresses arising from HIV/AIDS in their families.**

by HIV/AIDS as they strive to come to terms with their psychological turmoil. In other words, in addition to their traditional concern with intellectual development, schools are slowly recognising the need to play a more pro-active role in pupil psychological support and counselling.

## CONCLUSION

Many of these effects have already been observed in Zambia. It is expected that more focused qualitative and quantitative studies will detect ever more of them. It is also expected that almost all of these effects will manifest themselves in other countries that are severely affected by HIV/AIDS. In addition, it seems likely that, *mutatis mutandis*, many of the effects will also occur in other social sectors.

Notwithstanding the limited nature of the investigations already undertaken, there can be little doubt about the existence of these multiple adverse impacts of HIV/AIDS on education and schooling. The crucial question is what to do about them. In the absence of curative drugs and prophylactic vaccines, the only way currently available for dealing on a large scale with HIV/AIDS is through behavioural change, with information being translated into behaviours that promote a healthy state of mind, body and spirit (Siame, 1998).

In heavily infected countries, the ones most likely to be HIV free are those in the 5-14 year age group. These are the real window of hope for the future. They are also the target population for primary and junior secondary education.

The school system is the only social structure with the potential to reach out to all of these young people. Hence there is critical and urgent need to ensure that school systems in seriously affected countries are proactive in communicating an unremitting series of messages and information about HIV/AIDS.

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## AS AIDS SUCKS 1,300 ZAMBIAN TEACHERS!

Zambia Daily Mail Thursday, 2001

By CHANSA MULALAMI

THE HIV/AIDS pandemic is approximated to have killed 1,300 teachers in Zambia between January and October 1998, the equivalent of two-thirds of all newly-trained teachers graduating from college and university.

An additional 675 died last year alone. In Kenya, 1,400 teachers fell victims to the HIV/AIDS swoop in 1999 out of the 10,000 who have died in the past five years. Ironically, teaching is not essentially a migratory profession, though many practioners are often up and about looking for accomodation and brighter prospects in general. But that is not as far as the nightmare goes.

About 7 million agricultural workers in 25 worst-hit African countries including Zambia have died since 1985 from the epidermis whose cure has proved elusive. These are some of the statistics that reflect the gloomy picture of the HIV/AIDS impact on various professions in Africa. For a disease that was initially juxtaposed with homosexuality, the reality is as dramatic as it is melancholic; AIDS is rapidly inflaming respectable heterosexuals who were at one time aloof, 'untouchable.'

Suddenly there are no boundaries; AIDS is claiming anyone it can get its bloody hands on, irrespective of their professional or social calling.

This cunning smear of crimson on human resource has had significant bearing on the socio-economic prowess of African societies particularly, the majority of which are already engulfed in the cyclone of poverty. The contributing factor to poverty in the agriculture sector, for instance, is the reduced yield that results from diverted attention since growers spend bigger fractions of their time looking after patients and attending funerals.

"Productive families stricken by the AIDS epidemic are forced to sell their assets to pay for health care and funerals instead of investing in the sector," says Dr Chilandu Mukuka-Chilaika, Deputy Chief of the Zambia Integrated Health Programme Service. Speaking at the 96th annual Congress of the Zambia National

Farmers' Union in Lusaka recently, Dr Mukuka-Chilaika said there was urgent cause for enhanced efforts in HIV/AIDS prevention in the farming industry.

Apart from agriculture, the killer scourge has also plundered legal walls, breaking the silence that previously wrapped up the profession.

Judges, magistrates, police, et cetera, are rending their dignified cloaks with intensified calls for urgent redress before the pandemic paralyses their systems of operation. "Zambia Police is one of the organisations hard-hit by HIV/AIDS, the impact is very immense in that it has affected the operations of the police," disclosed Inspector Mufaya during a 3-day workshop for Zambia Police.

Organised by a South African company GlaxosmithKline, the workshop exposed the vulnerabilities affecting law enforcers while mapping up strategies of combating the scourge. "Police are also human beings with passions to contend with," said one officer from Emmasdale Police Station.

"More than anything, its the image that we carry in society. We have power and authority, meaning that we have influence and favour. "And since a police officer can be found at different places and at different times, this increases the risk of contracting HIV/AIDS." Asked what guidelines were there to help them escape the AIDS trap, the officer said there was growing sensitisation on the same although, much more could be done.

"You see, AIDS is not just a social problem. It is also a spiritual problem. You need to have strong principle to be able to withstand the pressures and temptations.

After all, we are just human." Commissioner of Police Emmanuel Lukonde, while conceding the extent of the deterioration in the socio-economic structure of many sub-Saharan countries, said there was a lot that could be done to mitigate the impact of AIDS. An expanded multi-sectorial response was currently in place which would extend to the reach of current prevention efforts. According to Lukonde, the most effective ways of preventing HIV/AIDS included behavioural and social change, making condoms available and affordable, providing diagnosis and treatment of STDs, ensuring safe blood transfusion and supporting interventions to reduce mother to child transmission. But these efforts, must inevitably and primarily deal with the human mind which, social scientists, traditionalists, and biblical scholars

among others have concluded, is usually resistant to change. "Sexual behaviours are complex and most difficult to change in terms of influences underlying them. In the fight against AIDS, people need to modify their risky sexual behaviour," says Newstead Samson Mseteka of University of Zambia (Unza) Counselling Centre.

Meanwhile, world leaders are being prompted to reinforce their political will and address factors such the need for increased food security, inadequate health care, and immorality in the fight against AIDS.

AIDS, hence, is fast becoming a topical issue in the workplace as the reality of it dawns on various economically active groups in Zambia. Millions of Kwacha meant to improve workers' skills and welfare are going to waste while an estimated 40, 000 production hours are being lost every year to funerals and health care costs. And the life expectancy plunged from 54 in the mid-eighties to 37 at the recent clock of the century, the veil of ignorance, indifference, and downright rebellion is being torn, sometimes the hard way through the loss of loved ones.

It is that close, that expensive.



## "ZAMBIA: POVERTY AND AIDS FORCE CHILDREN ONTO STREETS"

Lusaka, July (IRIN) Source: EQUINET NEWSLETTER 27 JULY 2001 - [www.equinet.org.zw](http://www.equinet.org.zw)

Pint-sized Edgar was 10 when he left his mother's shack in eastern Zambia to seek his fortune in Lusaka, the bustling capital of 1.3 million people. The puny but plucky youngster had no inkling about life in the city, but he was not perturbed. Nothing, he thought, could be worse than the miserable life he had led in Lundazi. It was an existence of few pleasures and endless chores. From morning, when he hauled several bucketfuls of water from a communal well half a kilometre away, to midnight, when the neighbourhood tavern at which he tried to sell his mother's hard-boiled eggs closed, the little boy knew no respite. When business was slow, his mother held him personally responsible and whipped him or denied him his supper, or both.

Two years on, Edgar has given up the quest for his fortune. He starts his day in the central business district, where he alternatively begs and runs errands to raise enough money for the imperative dose of "glue" – an intoxicating concoction of petrol and adhesives that the destitute sniff to dull the harsh realities of life on the streets. At midday, he walks over to Fountain of Hope, a non-governmental organisation outside the city centre that rehabilitates street children, for a free meal.

Edgar's life, multiplied many times over, represents the lot of thousands of the children that swarm the streets of Lusaka in a desperate quest for survival. Their number has risen markedly over the past few years, doubling to 75,000 since 1991.

The conventional wisdom is that the increase in their number is a direct consequence of HIV/AIDS. It is generally assumed that most of the children are forced onto the streets by poverty after one or both of their parents died of AIDS-related complications. According to the ministry of health, Zambia had around 520,000 "AIDS orphans" in 1999. That number is expected to rise to 895,000 by 2009 and to 974,000 by 2014.

"Perhaps half of all street children are orphaned children, indicating growing pressures on extended families to cope with the rapidly increasing orphan population," the ministry said in a report entitled 'HIV/AIDS in Zambia'.

However, new evidence suggests the HIV/AIDS pandemic is not necessarily the main reason that a growing number of Zambian children are living on the

streets. To begin with, around half of the 75,000 street children in Lusaka are not orphans. Moreover, recent studies have revealed the lot of Zambian children with parents is no different from that of orphaned ones.

"There is little difference in economic status between orphan and non-orphan children. Seventy-five percent of orphan children are found in households living below the poverty line and 72 percent of non-orphan children are also living in households below the poverty line," the government's 1999 Situational Analysis of Orphans and Vulnerable Children points out. "These problems (of food shortages, poor health, inadequate education and bedding) actually affect all the children, orphan and non-orphan, and indeed, all the community members," the report added.

Moreover, there is a growing realisation that poverty is not the only factor that forces children to live on the streets. That, at least, has been the experience of Foundation of Hope, which deals with an average 500 street children per day, providing them with food, schooling and shelter.

"A lot of other factors besides poverty, including psychological pressures, force children to leave their homes. Some leave to escape abuse of one sort or another, and others are compelled to go on the streets by peer pressure," Fountain of Hope administrative officer Emmanuel Mukanda told IRIN.

According to Mukanda, children who leave their homes for reasons other than economic pressure tend to be more difficult to rehabilitate than those forced on the streets by poverty. "Those children who ran away from home often require intensive counselling. The others, who are forced onto the streets by poverty, are relatively easy to reform. Once their basic material needs are met, their main problems are over," he said.

The realisation that many children end up on the streets because of psychological pressures prompted Fountain of Hope to extend its counselling services to the parents of runaway children. "Many parents come here to look for their missing children, and we try to counsel them along with the children. Sometimes, we succeed in bridging their differences, and the children return home," said Mukanda.

Observers, including the government and UNICEF, see the misconception that destitution among Zambian children is largely AIDS-related as sometimes diverting communities away from effective interventions. They argue that while the plight of orphan and non-orphan poor children is broadly similar, their specific needs can be different.

"There is ... value in distinguishing between orphans and other vulnerable children when considering psychological support, protection of rights, interventions targeted to their specific status as orphans and epidemiological

surveys," notes the government's Situational Analysis of Orphans and Vulnerable Children.

Moreover, Zambia, a country of 10 million people, has 19 non-governmental organisations whose core missions are to alleviate the plight of AIDS orphans. Few such organisations exist to address the concerns of destitute non-orphan children. However, there are signs that society is beginning to appreciate the fact that the problem of destitute children goes beyond AIDS orphans.

"Although communities start by looking at the needs of orphans, they soon reformulate their criteria to include other vulnerable children, namely those who are extremely poor," UNICEF notes in a report entitled, 'Children Orphaned by AIDS'.

## **POLIO**

### **THE DISEASE AND VIRUS**

#### **The Disease**

Polio is an infectious disease caused by a virus. It can strike at any age, but affects mainly children under three (over 50% of all cases). The disease causes paralysis, which is almost always irreversible. In the most severe cases, polio paralysis can lead to death by asphyxiation. Polio follows infection with any one of three related enteroviruses: poliovirus types 1, 2, or 3. The virus enters through the mouth and then multiplies inside the throat and intestines. The incubation period is 4-35 days and the initial symptoms include fever, fatigue, headaches, vomiting, constipation (or less commonly diarrhoea), stiffness in the neck, and pain in the limbs.

#### **Polio Paralysis**

Once established in the intestines, poliovirus can enter the blood stream and invade the central nervous system - spreading along nerve fibres. As it multiplies, the virus destroys nerve cells (motor neurons) which activate muscles. These nerve cells cannot be regenerated and the affected muscles no longer function. The muscles of the legs are affected more often than the arm muscles. The limb becomes floppy and lifeless - a condition known as acute flaccid paralysis (AFP). More extensive paralysis, involving the trunk and muscles of the thorax and abdomen, can result in quadriplegia. In the most severe cases (bulbar polio), poliovirus attacks the motor neurons of the brain stem - reducing breathing capacity and causing difficulty in swallowing and speaking. Without respiratory support, bulbar polio can result in death.

Large polio epidemics caused panic every summer during the 1940s and 50s in industrialized countries (US, Western Europe). At that time, people with polio affecting the respiratory muscles were immobilized inside "iron lungs" - huge metal cylinders that operated like a pair of bellows to regulate their breathing and keep them alive. Today, the iron lung has largely been replaced by the positive pressure ventilator; nevertheless, it is still in use in some countries.

Because no drug developed so far has proven effective, treatment is entirely symptomatic. Moist heat is coupled with physical therapy to stimulate the muscles and antispasmodic drugs are given to produce muscular relaxation.

#### **RISK FACTORS FOR INFECTION**

Although polio paralysis is the most visible sign of polio infection, fewer than 1% of polio infections ever result in paralysis. Most cases (90%) produce very

mild or no symptoms and usually go unrecognized. A further 5% to 10% of polio infections result in aseptic meningitis, a viral inflammation of the outer covering (meninges) of the brain. The rest involve mild flu-like symptoms common to other viral infections - mild fever, sore throat, abdominal pain, and vomiting.

No one knows why only a small percentage of infections lead to paralysis. Several key risk factors have been identified as increasing the likelihood of paralysis in a person infected with polio. These include:

- immune deficiency
- pregnancy
- removal of the tonsils (tonsillectomy)
- intramuscular injections
- strenuous exercise
- injury

#### The Hidden Virus

Poliovirus can spread widely without even being 'seen'. Most people infected with poliovirus (at least 90% of all cases) have no signs of illness and are never aware they have been infected.

After initial infection with poliovirus, the virus is shed intermittently in faeces (excrement) for several weeks. During that time, polio can spread rapidly through the community.

#### How is Polio Spread?

Poliovirus is spread through person-to-person, fecal-oral contact. Where hygiene and sanitation are poor, young children are especially at risk. Young children who are not yet toilet-trained are a ready source of transmission, regardless of their environment. Polio can be spread when food or drink is contaminated by faeces. There is also evidence that flies can passively transfer poliovirus from faeces to food.

The disease circulates "silently" at first, and may infect hundreds of people, depending on the level of sanitation, before the first case of polio paralysis emerges. Because of this silent transmission and the rapid spread of the disease, WHO considers a single confirmed case of polio paralysis to be evidence of an epidemic - particularly in countries where very few cases occur.

## VACCINES

Immunity against polio can be stimulated in two ways:

- through immunization, or
- following natural infection with poliovirus.

Poliovirus infection provides lifelong immunity against the disease, but this protection is limited to the particular type of poliovirus involved (Type 1, 2, or 3). Unfortunately, infection with one type does not protect an individual against infection with the other two types. The development of effective vaccines to prevent paralytic polio was one of the major medical breakthroughs of the 20th century. Two different kinds of vaccine are available:

- A live attenuated (weakened) oral polio vaccine (OPV) developed by Dr. Albert Sabin in 1961. OPV is given orally.
- An inactivated (killed) polio vaccine (IPV), developed in 1955 by Dr. Jonas Salk; unlike OPV, IPV has to be injected by a trained health worker.

Both vaccines are highly effective against all three types of poliovirus. There are, however, significant differences in the way each vaccine works.

#### Oral polio vaccine (OPV)

The action of oral polio vaccine (OPV) is two-pronged: OPV produces antibodies in the blood ('humoral' or serum immunity) to all three types of poliovirus. In the event of infection, this will protect the individual against polio paralysis by preventing the spread of poliovirus to the nervous system. OPV also produces a local immune response in the lining ('mucous membrane') of the intestines - the primary site for poliovirus multiplication. The antibodies limit the multiplication of 'wild' (naturally occurring) virus inside the gut, preventing effective infection. This intestinal immune response to OPV is probably the main reason why mass campaigns with OPV can rapidly stop person-to-person transmission of wild poliovirus.

#### Advantages of Oral Poliovaccine

OPV is an orally applicable vaccine. It does not have to be administered by a trained health worker, can be given by volunteers, and - unlike most other vaccines - does not require sterile injection equipment. The vaccine is relatively inexpensive (current price for public health programmes in developing countries is 8 US cents a dose) - a major consideration when governments have to purchase

Other diseases can be controlled through immunization, but never eradicated. For example, in the case of tetanus, the bacterium that causes the disease (*Clostridium tetani*) is widespread in the environment and can survive independently from a human host.

#### A Four-pronged Strategy

The strategy developed by WHO and its partners to eradicate polio is four-pronged:

- Routine immunization with OPV Supplementary,
- additional doses of oral poliovaccine during National Immunization Days,
- Mopping-up immunization activities,
- Enhanced surveillance for all cases of acute flaccid (floppy) paralysis and wild poliovirus

Source:<http://www.polioeradication.org/concept.html>

#### REQUEST FOR FULL LENGTH TEXT OF ARTICLES

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