Cancer control in Africa: which priorities?

Increased life expectancy and the continued presence of infectious diseases that are associated with risks of malignancies make cancer an increasing problem in sub-Saharan Africa. Survival from cancer in the region is very low,1 and only 5% of patients are estimated to receive chemotherapy.2 Most funds are spent on individual systemic treatments, even though many of the most common cancers in the continent (eg, Kaposi’s sarcoma, cervical cancer, breast cancer, and some types of non-Hodgkin lymphoma) can be prevented or detected early and thus be treated.3 The papers in this Series on cancer control in Africa outline that the use of traditional healers is extensive, access to medical services is poor, transportation for patients and families is difficult, and adequate equipment is scarce and poorly maintained. The progressive collapse of the extended family (because of migration, urbanisation, lifestyle change, and harsh economic conditions) and poor community support make the provision of assistance to patients even more challenging. The inability of many health services to provide early diagnosis, treatment, and follow-up care has a serious effect on cancer survival, and even for patients who do consult physicians early, cancer is under-recognised and often missed on physical examination.4 The approach to cancer in Africa must take into account all of these issues, and essential priorities need to be established if rhetoric is to be translated into improvements in diagnosis and treatment.

First, a leading priority should be primary prevention. An estimated 19% of cancers in men and 29% in women are attributable to nine modifiable factors.5 Population-wide interventions must be established to attempt to reduce factors such as alcohol misuse, diabetes, overweight, tobacco smoking, and exposure to urban air pollution, indoor smoke from household use of solid fuels, and hazardous wastes. Additional interventions should work to ensure sufficient fruit and vegetable intake, and to prevent ingestion of corn contaminated with fumonisin. Efforts should also focus on prevention of HIV and human papillomavirus (HPV) infection. Healthy lifestyle messages should be spread by effective local opinion leaders, especially through radio programmes (which are an important medium in the continent) and at meetings of community and faith-based organisations; the role of clinics, especially in rural and underserved areas, is also important.

Second, efforts should focus on the reduction of vaccine-preventable cancers. HPV vaccination for the prevention of cervical cancer should be introduced,
with practical issues such as involvement of teachers (and women’s groups to locate girls who are not in school), storage facilities, and the logistics of large-scale implementation addressed. The use of hepatitis B virus (HBV) vaccine for prevention of hepatocellular carcinoma should also be expanded. Although 179 of 193 WHO member states had introduced HBV vaccine into their immunisation programmes as of 2010, coverage is suboptimum (defined as less than 80% of infants receive the third dose of the vaccine) in many countries, and many infants in sub-Saharan Africa do not receive the first dose within 24 h after birth to prevent potential HBV transmission from chronically infected mothers.

Third, earlier diagnosis is essential. Most cancer diagnoses in Africa are made at very late stages, when treatment success would be impossible even with the best treatments in the world. Communities must be made aware of cancers, of their possible symptoms, and of the necessity of early diagnosis to ensure that cancer is not the death sentence that many people believe it to be. Individuals with symptoms likely to be caused by cancer must be identified in local areas and entered into care systems. Family doctors and nurses must be able to recognise early signs of cancer. In some cases (eg, cervical cancer) a screen-and-treat programme could be more widely implemented, even though pitfalls (eg, overtreatment, low sensitivity of the visual inspection-based screening strategy compared with HPV DNA testing, and the still imperfect performance of cryotherapy) would be inevitable.6

Fourth, African governments must improve health systems and invest wisely in cancer services. National cancer centres within or close to the best hospitals in each country should be established with help from public and private institutions from both within the country and internationally. Corporate funding support from private and multinational companies (eg, telecommunications, oil, gas, mining, and aviation industries) should be encouraged, and governments could introduce incentives for investments in cancer care services or research such as a compensatory tax deduction or other benefits.7 The number of cancer centres should be tailored to the population—eg, whereas Botswana or Namibia could have one cancer centre each, Nigeria and Ethiopia would need many more. Efficient rather than cumbersome and bureaucratic referral processes should be established, and equipment and instrument maintenance (which is poor or virtually absent in many African countries) should be ensured. Such national referral centres should be able to provide the full range of care, including diagnosis, chemotherapy, radiotherapy, surgery, follow-up, and palliative care. A well-equipped pathology laboratory, mental health and social work services, and support for transportation and home visits should be provided. Treatment should be free for poor patients. The concentration of cancer experts in one location would allow efficiency in consultation, establishment of specialised tumour boards (where difficult cases can be discussed), recruitment of patients into clinical trials, access to innovative treatment, and improved specialist training.

Some important questions could be answered in these centres: should expensive cancer-directed treatments be used in patients who are unlikely to benefit (eg, those with a low performance status, which is a common feature in sub-Saharan Africa)? Should high-cost staging studies be done in patients with low-stage breast and prostate cancers? Should the intensity and duration of chemotherapy be reduced for patients with benign ethnic neutropenia (which is common in black Africans) or not?

Endemic infections and other health problems are common in sub-Saharan Africa—patients with cancer can often have HIV or be malnourished, and infectious complications of cancer treatment (including an increased risk of tuberculosis) are a serious problem. In cancer referral centres, studies could be done to investigate the causes of febrile neutropenia which, for example, often complicates the treatment of children with Burkitt’s lymphoma. Efforts should be made to increase the quantities and types of anti-infective drugs available in cancer centres in many countries, since poor access to effective antibiotics for the treatment of chemotherapy-related multidrug resistant infections can jeopardise any potential benefits from modern anticancer drugs.8 Granulocyte colony-stimulating growth factors should only be used in high-risk neutropenic patients to reduce costs, and antimicrobial and antifungal drugs should be used only when appropriate so as to avoid further increases in resistance. The safety of transfusions should also be improved, since most African countries do not have
centralised national systems for blood collection and storage, and therefore rely on individual donations from family members or paid donors.\(^3\)\(^,\)\(^10\) Acquiring infectious diseases through transfusion remains a risk in many countries at present.\(^3\)\(^,\)\(^10\)

Finally, African governments should realise that building and maintaining a dedicated oncology workforce will need decades of sustained commitment and funding rather than ad-hoc, short-term efforts. Oncologists are in high demand and many do not serve in public institutions for long, preferring to work in profitable private practices or to move to developed countries. Concentration of oncologists and specialised nurses in referral centres will allow for subspecialisation and research and will ultimately increase retention. In addition to a rewarding environment, reasonable and attractive salary packages would probably work better than fee-for-service remuneration schemes.

In conclusion, the establishment of well-resourced, centralised cancer centres is urgently needed in sub-Saharan Africa. These referral centres should be seen by the population not as institutions for the dying, but rather as places where specialised clinicians, surgeons, pathologists, radiotherapists, nurses, radiologists, pharmacists, and laboratory personnel are given the right conditions to comfortably deliver high-quality care to patients with cancer, at an affordable cost. Earlier diagnosis, use of less toxic treatment protocols, close monitoring to prevent complications, and use of only those tests and investigations that are strictly necessary could reduce overall costs. At the same time, huge challenges in education and behavioural change will have to be overcome to ultimately succeed in controlling cancer and improving treatment success and survival.

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I declare that I have no conflicts of interest.

8 Bow EJ. There should be no ESKAPE for febrile neutropenic cancer patients: the dearth of effective antibacterial drugs threatens anticancer efficacy. J Antimicrob Chemother 2013; published online Jan 8. DOI:10.1093/jac/dks512.

Challenges for paediatric oncology in Africa

Tremendous progress has been made in cancer care for children in high-income countries, which has led to overall survival of 75–80%.\(^4\) However, 75–80% of children now live in parts of the world (low-income and most middle-income countries) where they have much less chance of being cured because of inadequate resources for treatment and care, and poor organisation.\(^2\)\(^,\)\(^3\) In Africa, large areas of the continent have no available care for children with cancer. This situation reflects the difficulties faced in the building of complex and expensive cancer care programmes. Mortality in children younger than 5 years in Africa is more than 15 times higher than in Europe or North America because of infection and malnutrition.\(^4\)

Political instability also has negative effects on the sustainability of health-related development programmes in the continent.

In this context, in April, 2000, physicians from France (led by Jean Lemerle) and Africa decided to work together in a joint effort to develop an infrastructure for paediatric cancer care in Africa. The resultant Groupe Franco–Africain d’Oncologie Pédiatrique (GFAOP; French–African Paediatric Oncology Group) planned to work together to adapt methods to diagnose and treat childhood cancer in Africa and to share their data in a prospective way. Six countries were initially