**CANCER IN THE DEVELOPING WORLD**

**Customizing Anticancer Strategies to Local Needs**

By Sarah Webb

Worldwide, the number of cancer cases each year could reach 27 million by 2030, and more than half of those will most likely occur in low- and middle-income countries, according to the World Health Organization’s *World Cancer Report 2008*.

Until recently, national cancer control efforts tended to focus on isolated goals: tobacco cessation programs, more radiotherapy machines, or extending the availability of Pap and other screening tests. But in the last several years, the focus has shifted to integrating such efforts into larger national cancer plans that build policy, infrastructure, and resources on the basis of an individual nation’s needs.

“Probably the best weapon we have to deal with the world cancer crisis is to have a national cancer plan developed in each country,” said Franco Cavalli, M.D., medical director of the Oncology Institute of Southern Switzerland and immediate past president of the International Union Against Cancer. Such a document provides a framework for each country to assess its cancer needs and look for solutions.

But even with growing recognition of the global cancer problem, few developing countries have national cancer control plans. And when they do, they typically have large gaps in information, resources, and infrastructure. The key to success, experts say, will be to help individual countries build cancer control programs that are self-supporting and based on their individual needs and resources.

**Range of Needs**

On the one hand, tackling a growing cancer burden in low- and middle-income countries means planning for the same wide range of needs as in wealthy nations. Tanzania, one of the poorest countries in sub-Saharan Africa, has a draft cancer control strategy that covers primary prevention, early detection, screening, and diagnosis; treatment; palliative care, cancer registration and surveillance, training, education and research; human resources development; establishing cancer societies; and integration of cancer control into existing health care services at all levels. “Cancer is the same everywhere,” said Jean-Marie Dangou, M.D., medical officer for non-communicable disease in the WHO’s regional Office for Africa in Brazzaville, Republic of Congo.

But Tanzania’s plan places a priority on expanded screening for cervical, breast, and prostate cancer, as well as Burkitt’s lymphoma, four diseases that affect many Tanzanians. The draft plan also emphasizes the collection of surveillance data to study the effectiveness and cost-effectiveness of particular strategies and to identify barriers to early treatment.

Accurate cancer incidence and mortality data remain a challenge in many countries. At least 80% of the world’s population does not live in a location covered by cancer registries, according to the WHO report. Even in Vietnam, which places a priority on cancer registries in its National Cancer Control Programme, there are no laws requiring them and insufficient staff to maintain them. Cancer registries exist in six cities in Vietnam, but only two contain data of high enough quality to be published by the International Agency for Research on Cancer.

Other countries have identified other priorities. Because of Nicaragua’s high cervical cancer mortality rate—11.1 per 100,000 women and rising among those older than 50 years—recent revisions to that country’s draft plan prioritize reducing those rates in women older than 35 years by 2015. In Yemen, cervical cancer rates are relatively low—comparable to rates in developed nations—so that plan does not include a program of mass cervical screening in communities, according to Daniel Malin, who is country liaison officer for the International Atomic Energy Agency’s (IAEA) Programme of Action in Cancer Therapy.

However, the incidence of head and neck cancers has increased dramatically in Yemen with a possible link to the chewing of the qat plant among men. To assess this problem, the draft of Yemen’s national cancer control plan recommends further case-control studies to study whether qat contains carcinogens or if pesticides used on this plant might be causing the increase in cancer cases.

**Primary Prevention**

Some countries see primary prevention programs as an opportunity to maximize the effect of their efforts. In India, with nearly a million new cases of cancer diagnosed each year, tobacco use causes up to 50% of cases in men and nearly 20% of those in women. As a result, tobacco cessation programs form an important part of the national and regional cancer control plans. Current priorities include the development of quit-tobacco clinics, tobacco education programs, and government policies that restrict smoking and limit the sale of tobacco, according to India’s National
Cancer Control Programme March 2008 task force report.

The efforts of local nongovernmental organizations, sometimes with the support of international nongovernmental organizations, help to carry out these efforts. For example, the American Cancer Society’s India Initiative supports local tobacco cessation efforts and tobacco control legislation in that country, said Nathan Grey, national vice president for international affairs.

That initiative began 10 years ago, but in 2008, with the guidance of national cancer control planners and WHO advisers, the American Cancer Society began integrating some of its efforts into broader local education initiatives that complement the national and regional cancer control priorities. For instance, working with the regional medical association in Ahmedabad, a city in Gujarat province, it is adapting its educational materials about oral, breast, and cervical cancer to reflect local cultural norms, Grey said. India’s national cancer control plan also prioritizes oral cancer screening (although a national screening program is not currently in place).

Radiotherapy and Cancer Plans

Radiotherapy, another piece of the cancer control puzzle in some countries, is costly in terms of equipment and training. In sub-Saharan Africa, most countries have no radiotherapy machines. Tanzania has one facility, the Ocean Road Cancer Institute in Dar es Salaam, but it has just two functioning machines, according to Malin.

Over the last 30 years, the IAEA has helped provide radiotherapy equipment and training to health professionals in developing countries, and since 2004, the agency has tied that assistance to the development
of comprehensive national cancer plans through its Programme of Action in Cancer Therapy (PACT). Malin said that demonstration programs are currently under way in six countries: Tanzania, Vietnam, Yemen, Albania, Nicaragua, and Sri Lanka.

Improving cancer control in general and radiotherapy in particular requires educating and training qualified medical professionals. Until recently, Tanzania’s radiotherapy technicians all had to be trained abroad. But for the last 2 years, the IAEA in partnership with local authorities has helped to establish a baccalaureate program to train radiotherapy technicians in Tanzania as part of the human resources development component of that country’s draft national cancer control plan.

Even though these indigenous training programs are a step in the right direction, IAEA experts said, low salaries in developing countries and attrition make retaining qualified technicians a challenge. PACT is one of the most positive recent developments toward dealing with the looming cancer crisis, Cavalli said. But progress is still relatively slow and many hurdles remain.

Cavalli thinks that tackling the global cancer crisis will probably require that cancer, like human immunodeficiency virus, become a topic on the world political agenda. “Probably the solution for the global fight against cancer is that it has to be recognized by international agencies like the World Bank and political organizations like the G8,” he said.

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