Expanding Cancer Prevention and Treatment in the Developing World

By Merrill Goozner

The incidence of curable childhood cancer in East Africa is comparable to that of advanced industrial countries, yet the death rate is five times higher. Cervical cancer rates in many low- and moderate-income countries are two to three times higher than in richer countries, and the mortality rate is twice as high, even though cervical cancer is preventable with vaccinations and treatable if caught early.

Faced with those stark differences, Rwanda’s health minister, Agnes Binagwaho, M.D., will soon launch a major campaign to detect and treat cancer among the country’s 11 million people, despite the presence of just two pathology labs and three hospitals that can analyze biopsy samples. The first focus will be on childhood cancers. “We’re targeting the cancers where we can save the most lives with the simplest (drug) regimens,” she said.

The country is piggybacking on its successful effort to combat infectious diseases such as HIV/AIDS in the aftermath of the 1994 genocide, which killed nearly 1 million Rwandans, including many of its best-educated citizens. Life expectancy is again over 50 years, due largely to the country’s success in curbing its infectious-disease epidemics. “We know how to control infectious disease,” Binagwaho said in a telephone interview from Kigali, the nation’s capital. “We need to know how to prevent and treat noncommunicable disease.”

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Cancer incidence and mortality rates in the developing world are shockingly high, even though the general public—even in poor countries—rarely thinks about cancer in impoverished regions. The developing world accounted for an estimated 55% of the 12.7 million new cancer cases and 64% of the 7.6 million cancer deaths worldwide in 2008. According to a report last October from the Global Task Force on Expanded Access to Cancer Care and Control in Developing Countries, an estimated 80% of the life-years lost to cancer occurred in these countries, yet they consumed just 5% of the resources devoted to fighting the disease.

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The task force called for a three-pronged strategy, starting with the design and implementation of large-scale demonstration projects in countries such as Rwanda. The goal is to identify innovative ways to create a medical infrastructure and to train professionals for treating cancer in resource-poor settings. Greater use of advanced telecommunications—with which physicians can analyze patients and prescribe treatment to remote locations—and training of local health care workers to provide home-based infusion are promising alternatives.

The report also called for creating international organizations to procure low-cost drugs, vaccines, and cancer-related services such as imaging for poorer countries, and it encouraged lobbying global health authorities to finance the prevention and treatment effort, which would include palliation. Cultural taboos and fear of addiction have kept pain medications in short supply in developing countries, even though opioids are generic and cheap. The result is that end-stage cancer patients in poor countries often die in pain.

“We need to understand the downstream delivery system issues and the barriers to obtaining treatment,” Knaul said. “Is this the best we can do, given the resources we have and the alternative, which is to do nothing? A lot of this is making sure you can do something. And a lot of what we recommend is not a bad thing to do in high-income countries, like home-based chemotherapy. . . I don’t believe that’s inferior care. I think it’s superior care.”

**The Push for Prevention**

On the prevention front, beyond stepped-up tobacco cessation work, the report called for mass vaccination programs against human papillomavirus, which causes nearly all cervical and some head and neck cancers, and hepatitis B, which causes liver cancer. On treatment, it highlighted the availability of generic drugs for a range of highly treatable lymphomas and leukemias, which now go untreated in most of the developing world, even though the success rate through chemotherapy is now around 80%. The report also endorsed early detection strategies for cancers where screening can have a major influence on outcomes, such as breast, cervical, and colorectal cancer.

“All countries are different in terms of their incidence, so we’re trying to work with the ministries of health who actually set policy and the health agenda,” said Julie Gralow, M.D., a professor of medical oncology at the University of Washington and Fred Hutchinson Cancer Research Center and a member of the task force. “We’re very clear that for any given country, they need to have good evidence of the incidence of the various diseases as well as cancer to set their own priority. We’re not asking for uniform standards across the developing world.”

Gralow first became involved in global anticancer work in the late 1990s while conducting breast cancer clinical trials in Ukraine. Oncologists there had insisted that local women could not tolerate Western chemotherapy regimens. Her U.S. Agency for International Development–funded study proved otherwise. Today, there are patient advocacy groups made up of breast cancer survivors advocating for early detection and better treatment in a dozen Eastern European and central Asian countries that were formerly part of the Soviet Union, Gralow said.

More recently, the Fred Hutchinson Cancer Research Center has been working with health officials in Uganda to add cancer diagnosis and treatment to its efforts to combat HIV, drug-resistant tuberculosis, and malaria. The country has a fairly high rate of Burkitt lymphoma—10 cases per 100,000 people—which is highly responsive to low-cost chemotherapy drugs. Yet mortality in the country is 80%. A training program in place since 2004 has increased the number of oncologists in Uganda from two to 10, and last fall the government broke ground on a U.S.-aided hospital and lab facility in Kampala that can treat Burkitt lymphoma and other cancers.

**Ensuring Access to Cancer Drugs**

The push for greater access to chemotherapy drugs should face fewer initial hurdles than was the case for HIV/AIDS, where most therapies a decade ago were still patented. Still, nonprofit advocacy groups and India generic manufacturers have been locked in a long dispute with Novartis over the right to make a generic version of Gleevec (imatinib) for chronic myeloid leukemia. And Thailand in 2008 invoked its right to make four cancer drugs that were still on patent and sold at high prices in that middle-income country. The conflict could intensify as the infrastructure for treating cancer in poorer countries improves. “If you look at the pipeline, there are medicines for cancer coming along that are better,” said Brook K. Baker, J.D., a professor at Northeastern Law School and a policy analyst for the Health Global Access Project, a nonprofit that focuses on accelerating access to drugs for infectious diseases. “The question will become, will poor people have to wait 20 years before they get access to them.”

But members of the Global Task Force point out that the most important drugs for addressing the unmet cancer treatment needs of the developing world are already generic and could be cheaply produced if local health systems were geared up to use them effectively. “It’s very important to distinguish those situations where a lot of benefit can be gained for a certain cost from other situations in cancer where even in the U.S. we can spend many hundreds of thousands of dollars and maybe extend life by weeks or months,” said David J. Hunter, M.B., Sc.D., M.P.H., dean for academic affairs at the Harvard School of Public Health. Although access to the latest patented therapies does raise equity issues, “the report chose to focus on off-patent drugs that could do the most good.”

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