

IAEA Nobel Peace Prize Cancer and Nutrition Fund

*"The Fund will be used to maximize the Agency's ability
to build capacity and transfer the
needed know-how to developing countries."*

IAEA Board of Governors

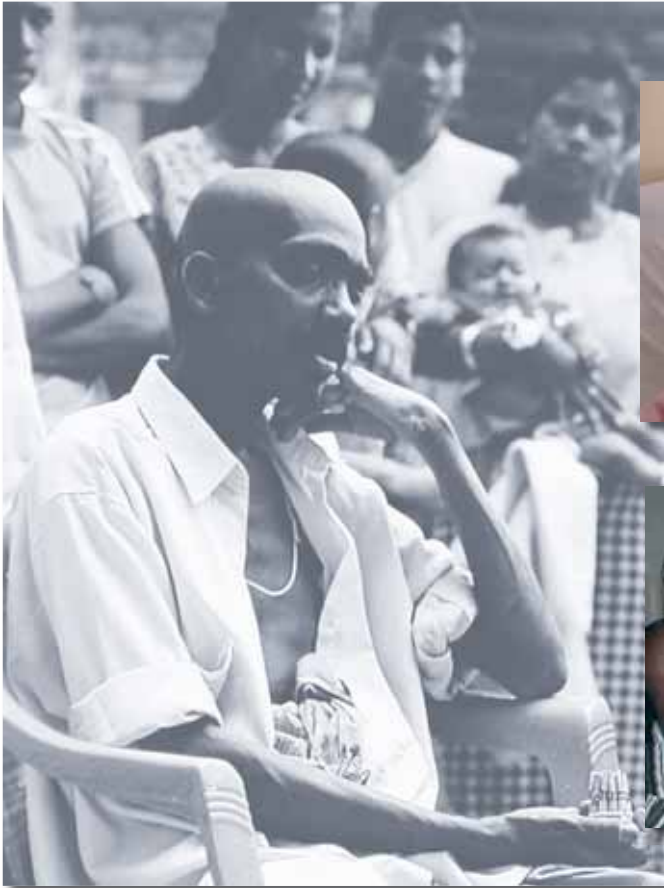


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P. Pavlicek / IAEA

Cancer and malnutrition are two of the biggest killers of both adults and children throughout the developing world.

IAEA Nobel Peace Prize Cancer and Nutrition Fund

Introduction

The Norwegian Nobel Committee awarded the 2005 Nobel Peace Prize to the IAEA and Director General ElBaradei in equal shares. The IAEA and its Director General won the 2005 Peace Prize *“for their efforts to prevent nuclear energy from being used for military purposes and to ensure that nuclear energy for peaceful purposes is used in the safest possible way”*.

The IAEA Board of Governors subsequently decided that the IAEA's share of the prestigious prize would be used to create a special fund for fellowships and training to improve cancer control and childhood nutrition in the developing world. This fund is known as the **“IAEA Nobel Peace Prize Cancer and Nutrition Fund”**.

The money will be dedicated to enhancing human resources in developing regions of the world for improved cancer control and childhood nutrition. In the area of cancer control, the money will be spent on establishing regional cancer training institutes for the training of new doctors, medical physicists and technologists in radiation oncology to improve cancer treatment and care, as part of the IAEA's Programme of Action for Cancer Therapy (PACT). In the realm of nutrition, the focus of the Fund will be on capacity building in the use of nuclear techniques to develop interventions to contribute to improved nutrition and health for children in the developing world.

Fund-supported fellowship awards will target young professionals, especially women, from Member States, through the IAEA's Technical Cooperation (TC) Programme. Alongside such awards, regional events will be organized in Africa, Asia and Latin America in cancer control and nutrition during 2006.

The IAEA Secretariat is encouraging Member States and donors to contribute to the IAEA Nobel Peace Prize Cancer and Nutrition Fund by providing additional resources, in cash and in-kind.

“At the IAEA, we work daily on every continent to put nuclear and radiation techniques in the service of humankind.”

**Dr. Mohamed ElBaradei,
Oslo, December 10, 2005**



D. Calma / IAEA



P. Pavlicek / IAEA



Over half of the 10 million people diagnosed with cancer each year live in developing countries.

Fighting Cancer

Donated funds will provide practical training — one key component of a comprehensive and multidisciplinary capacity building in cancer control. This will contribute directly to the primary goals of the IAEA's PACT.

Cancer is the second most common killer in the world today, after cardio-vascular disease. According to the World Health Organization (WHO), 12.5% of all deaths worldwide are currently caused by cancer, a greater percentage than caused by HIV/AIDS, tuberculosis and malaria combined. WHO also predicts that cancer will reach epidemic proportions over the next 15 years, increasing from 10 million new cases in 2000 to 15 million new cases by 2020. The largest increases are foreseen in developing countries, where governments are least prepared to address the growing cancer burden.

Some forms of cancer can be prevented and others can be treated curatively if detected soon enough. But in countries where health systems are overburdened by HIV/AIDS, tuberculosis and malaria, few resources can be allocated to cancer control, even if it is increasingly becoming a high priority as the number of cancer deaths increases. Health systems can not therefore support cancer prevention, primary care physicians are not screening for the most common and treatable types of cancer, and few countries are tracking the epidemiology of the vast and deadly disease. Without prevention and screening programmes, more than 70% of the cancer cases arriving at hospitals in the developing world are too far advanced to treat successfully. These systemic problems must be addressed if the developing world is to deal effectively with the growing challenge of cancer.

Transfer of radiation medicine technology to developing nations for the diagnosis and treatment of cancer, is an area in which the IAEA has excelled over the past 30 years. The IAEA has strong, demonstrated technical expertise and unrivalled experience in responding to the need for safe, effective and sustained implementation of radiotherapy services around the world.

PACT was created within the IAEA in 2004 as a response to the above critical situation. PACT is building on the IAEA's 30 years of experience in providing over \$160 million in cancer therapy assistance. PACT was designed to respond to the wide range of cancer needs in developing countries with the long term objective of helping countries create a sustainable capacity for cancer control.

PACT is building an international, public-private coalition of interested parties, including WHO, its six Regional Offices, International Agency for Research on Cancer (IARC), International Union Against Cancer (UICC), International Network for Cancer Treatment and Research (INCTR), Open Society Institute (OSI), American Cancer Society (ACS), and the US National Cancer Institute (NCI), to address the challenge of cancer in all of its aspects and achieve maximum public health impact in developing countries. PACT seeks to place cancer high on the global health agenda and to comprehensively address cancer needs in the developing world over the next 10 to 20 years.

One principal objective of PACT is to create an international network of cancer control training centres across the developing world. The Nobel Peace Prize Cancer and Nutrition Fund awards and training activities will directly contribute to the establishment of this human resources capacity building network through Regional Cancer Training Institutes.



P. Pavicek / IAEA



"Many things we need can wait, the child cannot. Now is the time his bones are being formed, his blood is being made, his mind is being developed. To him we cannot say tomorrow. His name is today." — **Gabriela Mistral, Nobel Laureate**

Combating Undernutrition During Early Life

Fund support in the realm of nutrition will be devoted to capacity building in the use of nuclear techniques to develop nutrition interventions contributing to improved childhood nutrition and health in the developing world.

One out of ten children born in developing countries will die before his or her fifth birthday. This extremely high death toll — in total more than 10 million young children die in developing countries each year — demonstrates the vulnerability of infants and young children to poor nutrition and poor health.

Four of the eight Millennium Development Goals highlight the importance of adequate nutrition for human health and development. The IAEA is assisting Member States in their efforts to achieve these goals by providing technical support for strategies to combat childhood undernutrition.

In particular, the IAEA contributes technical expertise in the use of stable isotope techniques in the development and evaluation of nutrition interventions. Stable isotope techniques have been used as research tools in nutrition for many years. However, the application of stable isotope techniques in programme development and evaluation is a relatively new approach, where the IAEA has a unique opportunity to contribute. As only stable (non-radioactive) isotopes are used, the techniques can be applied in the most vulnerable population groups, i.e., infants and children. The use of stable isotope techniques adds value by increasing the sensitivity and specificity of measurements as compared to conventional techniques.

The IAEA has supported numerous activities in infant nutrition where stable isotope techniques have been applied. These include projects to measure human milk intake in breast-fed infants, lean body mass (muscle mass) in lactating mothers, and bioavailability of iron in infants and young children.

The urgent need for effective nutrition interventions to combat undernutrition during early life cannot be more elegantly – or forcefully – summarized than by the Nobel Laureate Gabriela Mistral: *“Many things we need can wait, the child cannot. Now is the time his bones are being formed, his blood is being made, his mind is being developed. To him we cannot say tomorrow. His name is today.”*



L. Davidsson / IAEA

The window of opportunity in nutrition — targeting young women before pregnancy and infants and young children during the first 2 years of life.

IAEA Nobel Peace Prize Fund Institutes and Schools

Cancer Training Institutes

Cancer treatment facilities in many developing countries are not optimally utilized because of a lack of trained personnel. Inadequate human resources in cancer management also constrains the ability to expand cancer treatment services. To correct this, facilities and tools are required for the education and training of new radiotherapy professionals (at their home institutions, as much as possible) as well as for the retention of the existing staff by continuing professional development (CPD). Through its PACT, the IAEA and its strategic partners is proposing to accelerate multidisciplinary, cancer care training to ensure that investments in programmes, technology and facilities will have maximum public health impact.

Most IAEA-sponsored training of new radiotherapy professionals occurs in foreign countries at huge expense. Furthermore, such CPD activities disrupt the treatment of patients in busy radiotherapy departments that are already short-staffed and can ill afford to let key people go away for attending courses, and may even encourage 'brain-drain'. Even training the trainers sometimes has limited value because a new trainer may find the task of training others quite daunting.

The solution is to establish training networks or a "Virtual Cancer Control University" (VCCU) using modern Information Technology tools, and already available experience in developing countries, so that many more fellows can be trained without the disruption and the enormous costs of travel. Furthermore, such training will be able to bring a much larger number of top-notch international experts to teach because they won't have to travel long distances and spend many days in order to teach a small number of fellows.

Such training networks are already working well in many high-income Member States and in some developing Member States such as Jordan and India. Initially, one centre in each region shall be nominated as the 'hub' to maintain the server, upload new material, work with the IAEA to expand the contribution of IT material in education and training, and evaluate its success.

In line with the above, and in order to make the most effective use of the *IAEA Nobel Peace Prize Cancer and Nutrition Fund*, three **Regional Cancer Training Institutes** in Asia, Africa and Latin America will be established. These Institutes are intended to lay the foundation for the establishment of regional training networks and virtual cancer control universities envisioned by PACT. The Training Institutes will focus on cancer control training with special emphasis on radiation therapy. The first special 5-day meetings initiating this scheme will be organized in Africa, Asia and the Pacific, and Latin America in the Fall of 2006. Participants will include policymakers and professionals with a relevant background in cancer control and treatment. The theme of such events will be specific to the region in which it is held. They will also include presenters from the World Health Organization (WHO) and other cancer control organizations, in addition to IAEA and faculty from each region.

The aim of these special events is to draw the attention of policymakers and the public to why comprehensive cancer control is so essential for enhancing the effectiveness of cancer treatment by radiotherapy. The events will also encourage the planning for and investments in Regional Cancer Training Institutes to alleviate the severe shortage of cancer control

professionals worldwide. Lecturers will include international experts in comprehensive cancer control and radiation oncology from WHO, IAEA and other international cancer organizations as well as local and regional health care experts.

There will be modules on the following topics:

- **Comprehensive cancer control:** the need for national programmes in prevention, early detection, treatment, palliation and cancer data collection and their positive effect on cancer treatment and survival rates.
- **Evidence-based radiation oncology:** the optimal treatment of common cancers in each continent will be described using cost effective modalities.
- **Clinical research:** the methodology of clinical research and in particular its implementation in developing countries with limited resources, with an emphasis on creating sustainable research programmes.
- **Education and training:** developments in education and training of professionals in radiation oncology i.e. radiation oncologists, medical physicists, radiation therapy technologists and nurses. Plans for developing networks for the transfer of information will be described.
- **Emerging techniques in radiotherapy planning and delivery:** newer and developing techniques, their advantages and disadvantages, cost-benefit considerations, and their implementation.

The above Special Events under the *IAEA Nobel Peace Prize Fund for Cancer and Nutrition* are scheduled for late fall 2006, and will be kicked off with an event at the General Conference in September. More detailed information about the exact dates and the venues is available at this web site: www.iaea.org/Nobelfund.

Schools in Nutrition

The aims of the **IAEA Nobel Peace Prize Fund Schools in Nutrition** are to:

- 1) raise awareness of IAEA's activities in human nutrition and
- 2) disseminate information about the usefulness of stable isotope techniques in the development and monitoring of nutrition programs to combat malnutrition, in particular in infants and children.

"The IAEA Nobel Peace Prize Fund Schools" are initially being organized as regional week-long events in Africa, Latin America and Asia during fall 2006. Participants will include policymakers and professionals with relevant background in nutrition. Each "school" will have a specific theme, relevant to the region.

In Asia, the theme of the IAEA Nobel Peace Prize Fund School in Nutrition will be *"Focus on interventions to combat undernutrition during early life"*. Undernutrition is an important factor in more than half of all child deaths worldwide. The high prevalence of infants born with low birth weight and undernutrition among Asian children, especially in South Asia, emphasizes the urgent need to develop effective nutrition interventions within "the window of opportunity", i.e., to target young women pre-pregnancy as well as infants and young children during the first 2 years of life.

In sub-Saharan Africa, the high prevalence of HIV/AIDS combined with food shortages and high prevalence of undernutrition highlight a current crisis. Infants and children are especially vulnerable as HIV-infection impairs growth early in life. The causes of growth faltering are multifactorial and often include insufficient food intake as well as frequent episodes of diarrhoeal disease and other opportunistic infections. The IAEA Nobel Peace Prize Fund School in Nutrition in Africa *“Integrating nutrition into the management of HIV/AIDS”* will address issues related to nutrition and HIV/AIDS during early life.

In addition to the devastating consequences on health, well-being and development due to undernutrition in developing countries, the rapid changes in diet and life style — “nutrition transition” — have resulted in escalating numbers of overweight and obese individuals with increased risk of nutrition related chronic diseases such as heart disease and diabetes in many settings, for example in Latin America. The double burden of malnutrition, i.e., under- and overnutrition, is often found to co-exist within communities and even within households. These complex problems will be the focus of the IAEA Nobel Peace Prize Fund School in Nutrition in Latin America *“Combating the double burden of malnutrition”*.

A senior nutritionist and/or public health specialist will be invited to present an overview of the specific topic. Lecturers, regional and/or international experts, will discuss stable isotope techniques in the following applications:

1) Body composition; 2) Human milk intake in breastfed infants and lactating mothers’ body composition; 3) Energy expenditure; 4) Iron and zinc bioavailability; 5) Vitamin A status

Fellowship training (several months) for young professionals from developing countries in nuclear techniques in nutrition will be organized for highly qualified candidates.

Support for the Cancer and Nutrition Fund

The IAEA is seeking monetary support as well as in-kind support for both the **IAEA Nobel Peace Prize Fund Schools and Institutes** and Fellowship Awards established through the Cancer and Nutrition Fund.

For additional information about supporting activities in comprehensive and multidisciplinary cancer control capacity building, please contact:
Dr. Massoud Samiei, Head PACT Programme Office (PPO), at pact@iaea.org or visit the PACT website: <http://www-naweb.iaea.org/pact/>.

For further information about supporting human resource development in the nutrition field, please contact: Ms. Lena Davidsson, Section Head for Nutritional and Health-related Environmental Studies at L.Davidsson@iaea.org or visit the Nobelfund website: <http://www.iaea.org/Nobelfund>.



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