VUCCnet

Virtual University for Cancer Control:

Africa Pilot

IAEA

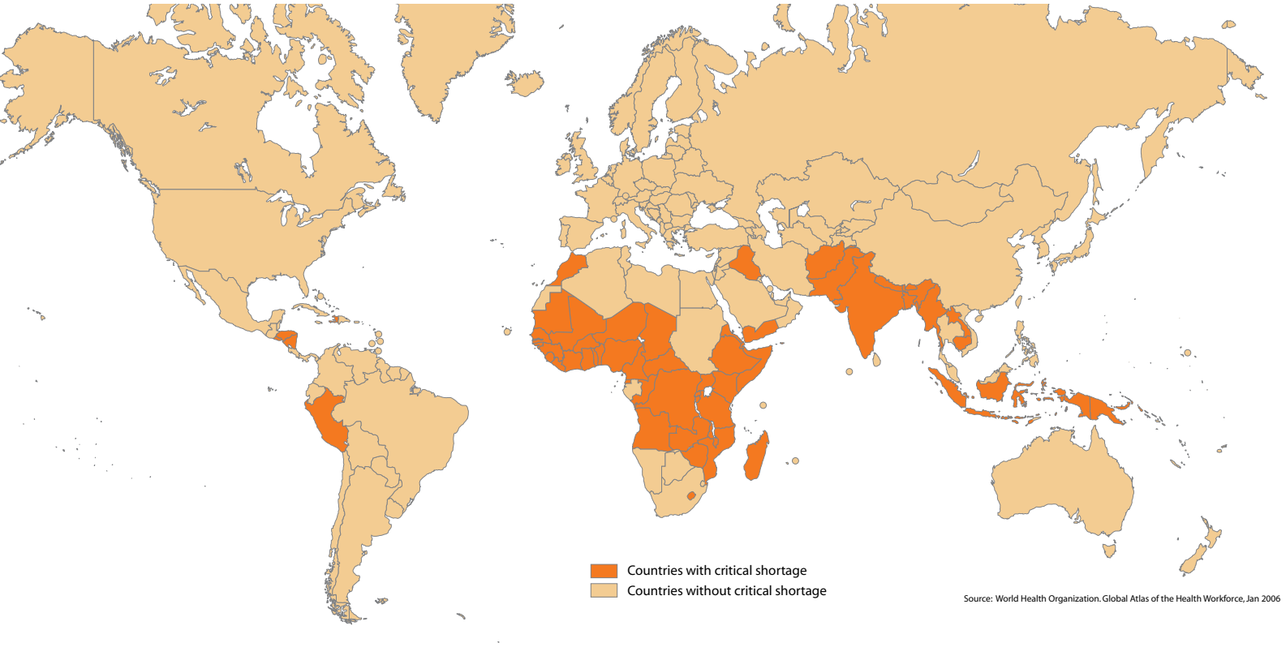
Programme of Action for Cancer Therapy

PACT

The Health Care Emergency

In 2006, the World Health Organization (WHO) informed the world of a shortfall of 4.3 million trained health workers globally. Without an adequate supply of health workers, any attempt to increase global access to health services will be ineffective and world health objectives, such as those foreseen in the Millennium Development Goals, will be impossible to achieve. According to WHO, **57 countries are currently experiencing a health care workforce crisis, including 36 in sub-Saharan Africa**.

One area where the shortage of trained health care professionals makes a significant impact is in cancer control. Cancer incidence in developing countries has been increasing steadily in recent years due to several factors, including the ageing of the population, widespread urbanization and the growing prevalence of unhealthy lifestyles. According to WHO, **cancer causes 7.9 million deaths per year, of which 70%, or 5.5 million, occur in the developing world**. By 2030 this number will grow to over 9 million, while remaining relatively stable in developed countries.



Source: World Health Organization. Global Atlas of the Health Workforce, Jan 2006

Africa's Crisis

With 10% of the world's population, Africa bears 24% of the global communicable and non-communicable disease burden, but has only 3% of the world's health workforce and less than 1% of the world's financial resources for health. This means that, according to global workforce shortage figures, **there is a deficiency of 1.5 million health workers in Africa alone**, leaving the continent void of concrete means by which to fight the high rate of disease. One of the greatest challenges for Africa in disease control today is the cancer epidemic. **Over the last 5 years cancer has killed more than 2.5 million people in Africa** and is expected to kill millions more in the coming decade if no action is taken. One of the first steps necessary for implementing a comprehensive cancer control programme is the training of health professionals. Unfortunately, due to limited budgets, lack of infrastructure and high student costs, aspiring health professionals are not given the opportunities necessary to foster their development as key players in the fight against cancer in Africa.

Radiation Medicine

Radiation medicine is one of the best known methods of diagnosing and treating cancer. It can also be used to provide pain relieving therapy to those with cancer cases too advanced to be cured. Radiation medicine includes radiotherapy, diagnostic radiology, nuclear medicine and medical physics. Radiotherapy or radiation oncology involves treating cancer by radiation through external beam or brachytherapy (internal radiation where the radioactive source is placed directly into or near the tumour).

VUCCnet

In the face of the looming health care emergency in low and middle income countries and considering that the IAEA, through its Human Health Programme, has developed extensive educational and training material, as well as curricula for radiation medicine, PACT, in cooperation with its international partners in cancer control and experts in **radiation medicine** within the IAEA, conceptualized a **Virtual University for Cancer Control (VUCC) supported by a Regional African Cancer Training network (RACT network), collectively called VUCCnet**. The VUCCnet Pilot Project aims to contribute to ongoing efforts by Member States in Africa to address cancer control workforce shortages by promoting a combination of e-learning and traditional teaching approaches that provide effective, low-cost educational opportunities to students in sub-Saharan Africa.

Virtual University for Cancer Control

The first component of the VUCCnet is the Virtual University for Cancer Control. The VUCC is designed to function as an innovative learning apparatus that, working alongside conventional teaching methods, integrates affordable cancer control education into the curricula being offered at existing African education and training institutions. Through the VUCC, students will have access to learning materials that can be used at their own pace, either alongside other course work, or as a means for practicing health care professionals to refine or update their knowledge base. The ease of access and affordability offered by the VUCC will allow for more learners to partake in cancer control training, thereby increasing the number of health care professionals available in participating Member States.

IAEA/PACT Fighting Cancer

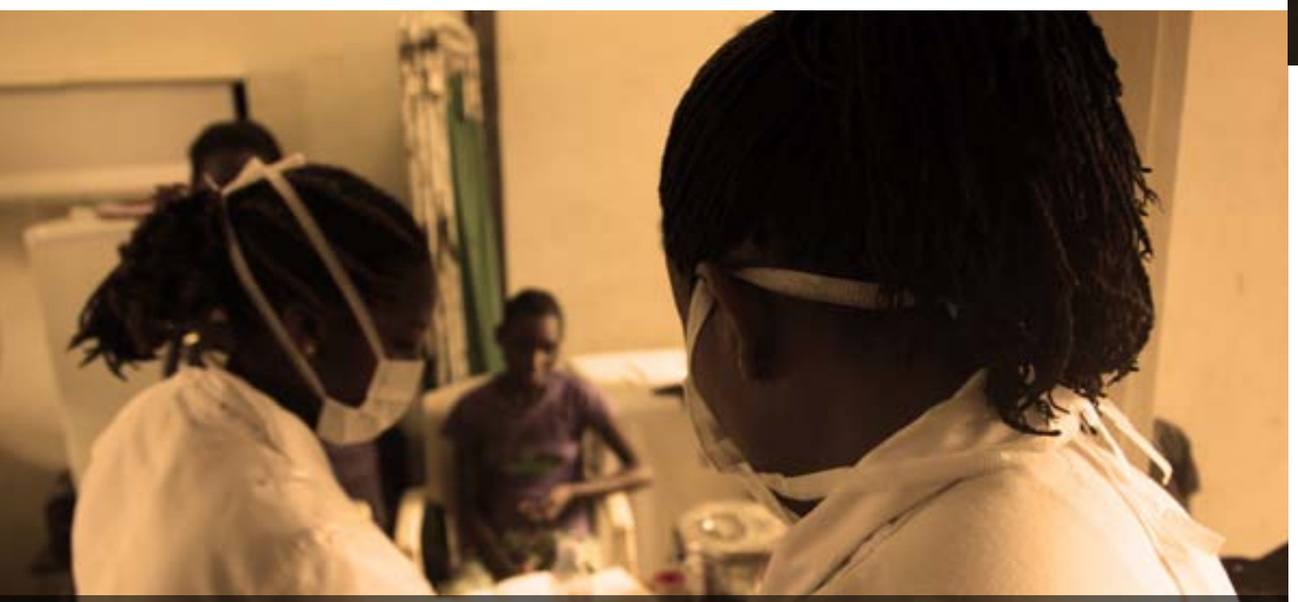
A crucial aspect of cancer control is the availability of diagnostic and therapeutic services, especially radiation medicine, to patients in need. In Africa, 80% of the population lives without access to radiotherapy and/or other related services used to battle cancer. Recognizing the global need for assistance in the acquisition of radiation medicine, for the past thirty years, the IAEA has worked in some 115 low and middle income countries to deploy robust radiotherapy and nuclear medicine programmes, expending over US $250 million on cancer related assistance under its Technical Cooperation Programme, with technical support provided by the Division of Human Health.

In 2004, the IAEA established the Programme of Action for Cancer Therapy (PACT) in support of the World Health Assembly's call for action against cancer. PACT stands as the IAEA's umbrella programme for combating cancer and builds upon the IAEA's vast experience in radiation medicine and technology by focusing on comprehensive cancer control. In 2009 WHO and the IAEA established a Joint Programme on Cancer Control to enable LMI Member States to introduce, expand and improve their cancer treatment capacities and therapeutic effectiveness by integrating radiotherapy into comprehensive national cancer control programmes.

Delegates discuss health professional training at the 2011 VUCCnet Africa: Annual Stakeholders' Project Coordination Meeting at IAEA headquarters in Vienna.

Regional African Cancer Training network

To make the VUCC a reality, PACT is promoting the establishment of a Regional African Cancer Training network to consolidate programmes that currently exist throughout Africa, thereby increasing local capacity for training and creating a solid support base for the VUCC. PACT and its partners are also seeking support from Member States in Africa that are more advanced in the area of cancer control training to share best practices and develop a culture of cooperation in cancer care education, eventually leading to the establishment of sub-regional cancer control workforce training hubs. By bringing together countries with similar cancer training goals, Africa will have the opportunity to harmonize regional policies regarding health care credentials, helping to standardize the path that aspiring African cancer care professionals must take to reach certification.



Nurses in the United Republic of Tanzania prepare to administer chemotherapy to a patient. The demand for Nursing is among the highest of all health professionals in African health systems.

VUCCnet Africa Pilot Project

The Africa Pilot phase of the VUCCnet project was officially launched in 2010, during a kick-off meeting in Accra, Ghana, which was attended by over 35 leaders in cancer control from Africa, as well as representatives from the IAEA and its partner organizations.

The project, funded by the Roche African Research Foundation, the US Government and the IAEA, is focusing, initially, on **four Member States that represent the English-speaking component of VUCCnet-Africa: Ghana, Uganda, United Republic of Tanzania and Zambia**. It is expected to initiate a French-speaking segment of the project as soon as additional funding becomes available.

A radiation therapy technician prepares to administer a dose of radiotherapy. In the developed world, between 50% and 60% of patients diagnosed with cancer will receive radiotherapy at some point during their treatment. In low and middle income countries, only 20% of patients receive the radiotherapy treatment that they require.

In the further development of cancer education and training in the pilot countries, **South Africa and the Arab Republic of Egypt will operate as mentors**, as they currently maintain considerable educational capacity and can provide access to institutions focused on training cancer professionals, particularly the IAEA's radiation medicine-related candidates.

'Proof of Concept' Exercise

The first year of the VUCCnet Pilot culminated in a test exercise aimed at evaluating a functional prototype of the VUCCnet e-learning system within the 4 pilot African Member States. The course, an 18 hour Cervical Cancer Prevention and Screening Course developed by the Institut Català d'Oncologia (ICO), was selected because cervical cancer is a high priority for Member States in the region. 56 doctors and nurses from the 4 pilot Member States took part in the exercise, which proved successful, with **over 90% of those completing the course earning a passing grade and receiving accreditation** from the "Commission for Continuing Education of the Spanish National Health System" and the "Accreditation Council of Oncology in Europe".

Today, in Ghana, Tanzania, Uganda and Zambia, a cancer diagnosis is nearly a death sentence; with close to 78% of those diagnosed losing their battle with the disease. In order to offer comprehensive cancer control to their national populations, these countries aim to train 250 oncologists, over 8000 nurses, 2800 community health workers and several other health professionals, all within the next 10 years.

Panel discussion on the regional approach to "Standards, Accreditation & Recognition" at the 2011 VUCCnet Africa: Annual Stakeholders' Project Coordination Meeting at IAEA headquarters in Vienna.

Moving Forward

Building upon the 'proof of concept' exercise, PACT has been working with the VUCCnet pilot countries to develop the next steps of the VUCCnet project. **Plans currently include 10 new courses**, developed by PACT partners and confirmed by IAEA Member States, with 6 courses provided for the in-service training of current professionals and 4 courses established for new students at the pre-service level. The new courses will address areas specified by the pilot countries as priorities, and at least one course will be established for each core component of cancer control. The first courses to be developed will be:

	In-Service	Pre-Service
Prevention	• Community Health Workers (Cancer Skills Package)	
Early Detection	• Cervical Cancer Screeners Early Detection (VIA)	
Diagnosis & Treatment	• Pathology Technicians • Surgeons (Surgical Oncology Modules)	• Radiation Therapy Technician • Clinical Oncologist • Oncology Nursing • Pathologist
Palliative Care	• Palliative Care practitioners (short courses)	
Surveillance	• Data Collectors Training	

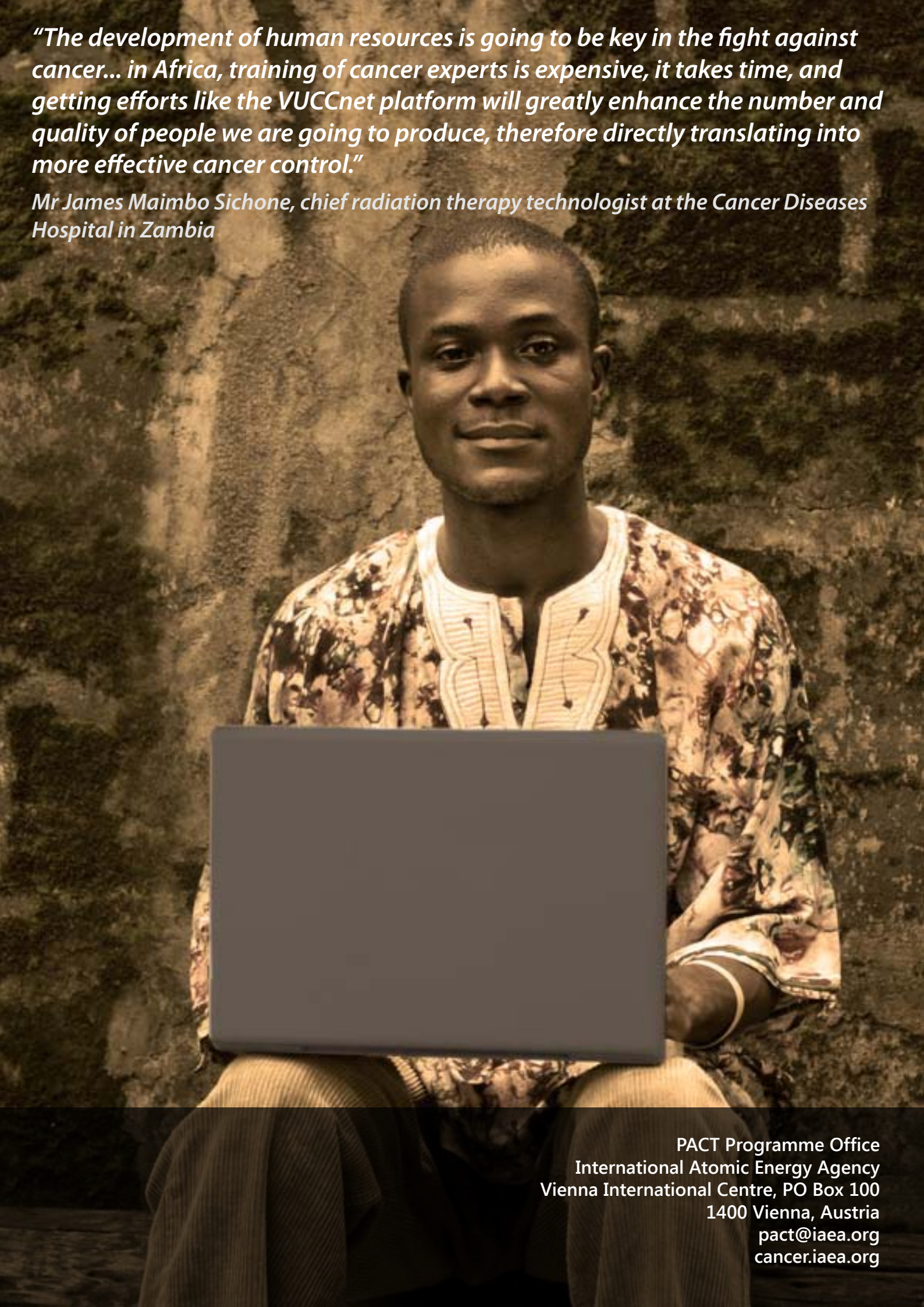
Partnerships

Partnership is the cornerstone of the PACT programme, and the international involvement in the VUCCnet project has been exceptional with **the first annual VUCCnet meeting engaging participants from more than 15 Member States** and representatives from these PACT partners:

- World Health Organization (WHO)
- International Agency for Research on Cancer (IARC)
- US National Cancer Institute (NCI)
- Union for International Cancer Control (UICC)
- International Network for Cancer Treatment and Research (INCTR)
- African Organisation for Research and Training in Cancer (AORTIC)
- African Radiation Oncology Group (AFROG)
- Cairo University e-Learning Centre (ELC)
- African Virtual University (AVU)
- Catalan Institute of Oncology (ICO)
- Roche African Research Foundation (RARF)

"The development of human resources is going to be key in the fight against cancer... in Africa, training of cancer experts is expensive, it takes time, and getting efforts like the VUCCnet platform will greatly enhance the number and quality of people we are going to produce, therefore directly translating into more effective cancer control."

Mr James Maimbo Sichone, chief radiation therapy technologist at the Cancer Diseases Hospital in Zambia



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