

## BRIDGING THE RADIOTHERAPY EDUCATION GAP



**B**y 2050, the global cancer burden is expected to grow to 27 million new cancer cases and 17.5 million cancer deaths per year, according to the American Cancer Society. There is a stark inequality in access to radiotherapy treatments depending where in the world you live. Whereas the United States has roughly 12 medical linear accelerators per million population and most developed European countries have between 5 and 8 machines per million, developing countries in Asia, Africa and Latin America have far fewer than one machine per million. Conservative estimates suggest the world needs up to 10,000 more treatment machines to even start bridging this gap, in effect nearly doubling the number of machines installed globally today.

But even if this level of investment were feasible, there are nowhere near enough qualified staff to operate the new machines. This is why Varian Medical Systems, the world leader in radiotherapy equipment and software, have developed the Access to Care programme to help facilitate the training of doctors, technicians and medical physicists to begin clinical work.

"We started to develop this concept three years ago because of the vital need to educate the market and we spent the first year speaking to people across the developing world and discovering their needs," says Jon Hollon, Senior Director, Worldwide Training and Education. "The programme has been designed to bridge the education gaps that may exist in a particular region and by doing so enabling the safe, effective and efficient clinical operation of radiotherapy equipment."

Access to Care is based around three core elements: a distance learning programme, offering students a dynamic and innovative platform to access academic content; access to global clinical expertise via Varian's Network of Experts; and clinical exposure for students at a one of Varian's Network of Experts partner sites.

Varian has established in-house training and education centres to provide training on the safe and effective use of its products in the United States, China, Switzerland, India,

Japan, France and Russia. The company delivers 4,000 training events annually and globally has 120 applications specialists and an 80-strong clinical helpdesk to help guide students through the learning process.

### Access to Care in action

An early Access to Care project is taking place in Iraq, where direct on-site training is challenging due to travel restrictions. To compensate for this, Varian has developed educational modules specifically for customers in Iraq. The need for such a programme became greater when Varian donated a treatment machine to the Basra Children's Hospital as part of the charitable Project Hope.

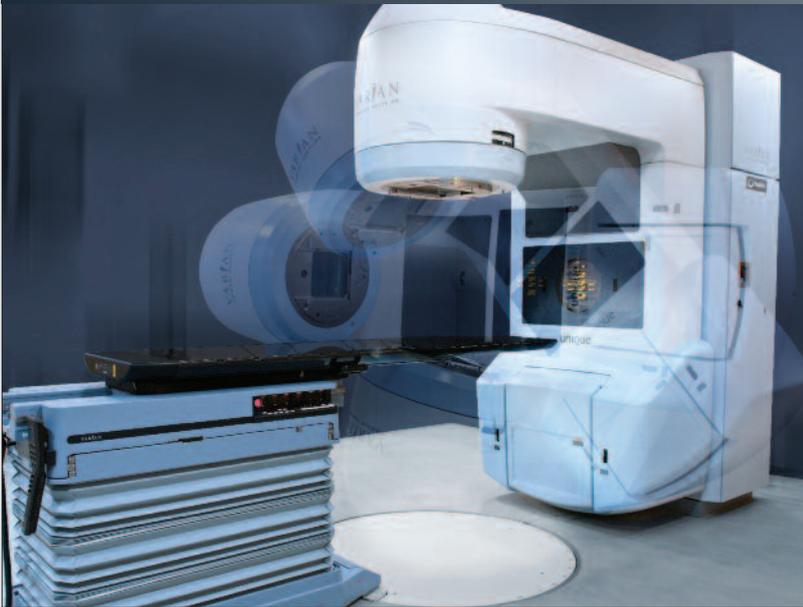
When this hospital opened its doors on 26 October 2010, it represented the culmination of a seven year dream by Project HOPE, the United States government, former First Lady Laura Bush and the Iraqi government to provide the nation's children with a modern, tertiary care, referral paediatric cancer specialty hospital. For advanced radiotherapy treatments, patients are treated using a modern linear accelerator donated to the project by Varian.

Childhood cancers are eight to ten times more common in Iraq than in developed countries, with a particularly high prevalence of brain tumours, lymphoma and leukaemia. To help with advanced cancer treatments, Varian donated a Clinac® iX linear accelerator for treatments and a simulator for planning and verifying treatments.

"We envisioned a new hospital with modern equipment and well-trained clinical staff," says Project Hope CEO Dr John P Howe III. "The Iraqi population is very youthful – children represent over a half of the total population – and the country's ministry of health is trying to provide quality care for more than a million children in southern Iraq and Basra, the country's second largest city. The donation from Varian represents a tremendous gift to the children of Iraq and it gives them a chance to be healthy future leaders of their country."

As part of the Access to Care programme, staff at the Basra Children's Hospital and other Varian customers in Iraq will

Figure 1: Varian UNIQUE™ system – a cost-effective, efficient and reliable system for cancer treatment



travel to a reference centre of excellence in Turkey for clinical training provided by clinicians coordinated by Varian and supervised by local staff. “After this they will then return to their hospitals, where a Varian-trained local consultant will support them,” says Jose-Manuel Valentim, Director of Global Education Programmes. “We will then have weekly conference calls.”

Varian is also initiating an Access to Care programme in Vietnam, in partnership with the National Reference Hospital (K Hospital) and the country’s ministry of health. “There are no university courses for radiotherapy in Vietnam, so practitioners tend to learn how to do it by simply working in a clinical environment,” says Valentim. “We are bringing the academic content to them via a Web platform and establishing a structured internship. We will also have the Access to Care programme materials translated into Vietnamese for them.”

As a pilot project aimed at education within the country’s health care sector, up to nine Varian Access to Care courses in Vietnam will train 30 people – 10 radiation oncologists, 10 medical physicists and 10 radiotherapy technicians. A similar Varian programme is planned for 2014 in Russia, in conjunction with the state SMBA Hospital and in Algeria, in conjunction with the state CPMC Hospital. Other projects are now being developed to address the needs of Africa with initiatives starting in Ghana and South Africa.

Another Access to Care initiative involves an exclusive agreement between Varian and LaraNara, the Swedish makers of a well-known educational software that hosts academic content specific to radiation oncology. “A lot of

Swedish clinicians have been trained on LaraNara, which generally takes the form of distance learning because of the size of Sweden, and the programme has also been rolled out in India via a collaboration with a hospital in Chennai,” says Valentim. “Varian has translated the LaraNara content into English and signed an exclusive agreement to run LaraNara programmes, initially for doctors, then technicians and finally for medical physicists by the end of 2014.”

### UNIQUE radiotherapy system

Varian has supported these educational initiatives by introducing a treatment system aimed specifically at cancer clinics in developing countries. Since the UNIQUE linear accelerator (Figure 1) was introduced as the world’s first low-energy radiotherapy

system with image-guidance and RapidArc® treatment capabilities, it has made advanced care more affordable and more widely available to cancer patients around the world. The UNIQUE system represents a complete cost-effective radiation oncology solution featuring all components and services to build a state-of-the-art radiation therapy cancer centre. RapidArc volumetric modulated arc therapy enables advanced image-guided treatments to be delivered in a fraction of the time needed for older “step-and-shoot” intensity-modulated radiotherapy treatments.

“This package is truly a unique offering for developing countries,” says Kolleen Kennedy, President of Varian’s Oncology Systems business. “We added high-tech image-guidance and arc therapy tools to a low-energy platform together with our treatment planning and information management software so that technology for fast, state-of-the-art cancer treatments can be made available to treatment centres at a cost around US\$ 2 million.” ●

#### For more information

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