UNIQUE™ Performance Edition

Uncompromising Cancer Care for Everybody

VARIAN
medical systems

A partner for life

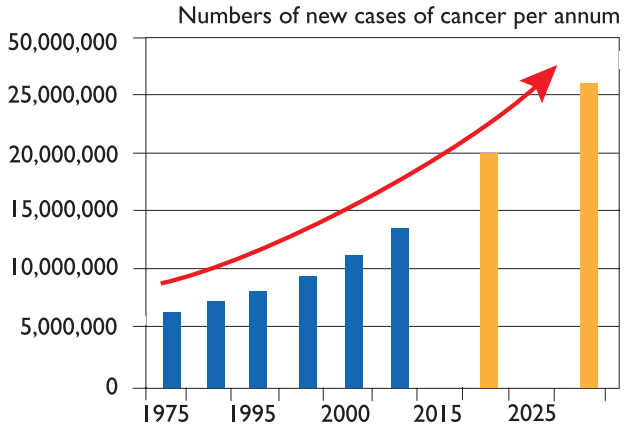
Radiotherapy
A Cost-Effective Solution

The global cancer burden doubled in the last thirty years of the twentieth century, and it is estimated that this will double again between 2000 and 2020 and nearly triple by 2030.
Source: WHO World Cancer Report 2008.

Radiotherapy (RT) is an essential component of the treatment of cancer, and whether used palliatively or to cure, radiotherapy has been shown to be cost effective. Radiotherapy is one of the least expensive cancer treatments per patient and one of the most effective in terms of cure and overall survival.
Source: WHO World Cancer Report 2008.

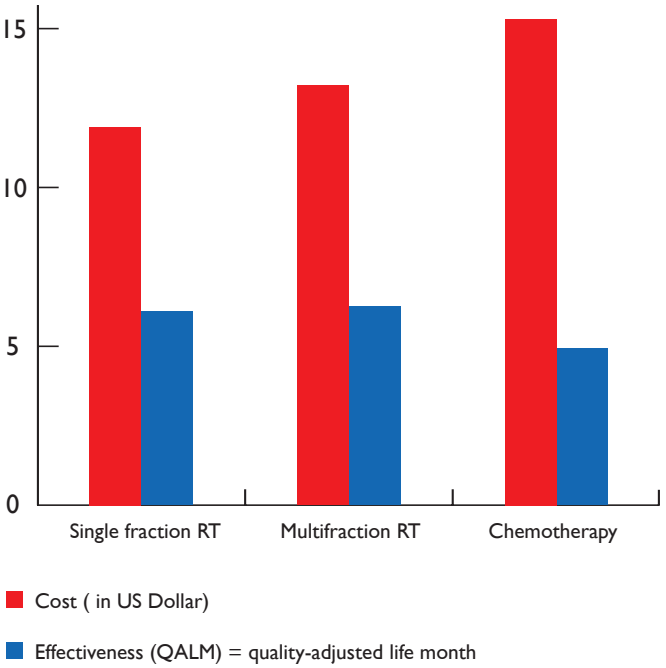
Single-fraction Radiotherapy was the most cost-effective palliative treatment compared to pain medication and chemotherapy.
Source: Andre Konski, Int. J. Radiation Oncology Biol. Phys., Vol. 60, No.5, 1373 – 1378, 2004.

Estimated Global Cancer Burden



Source: WHO World Cancer Report 2008.

Cost-Effectiveness of various treatment options for bone metastasis



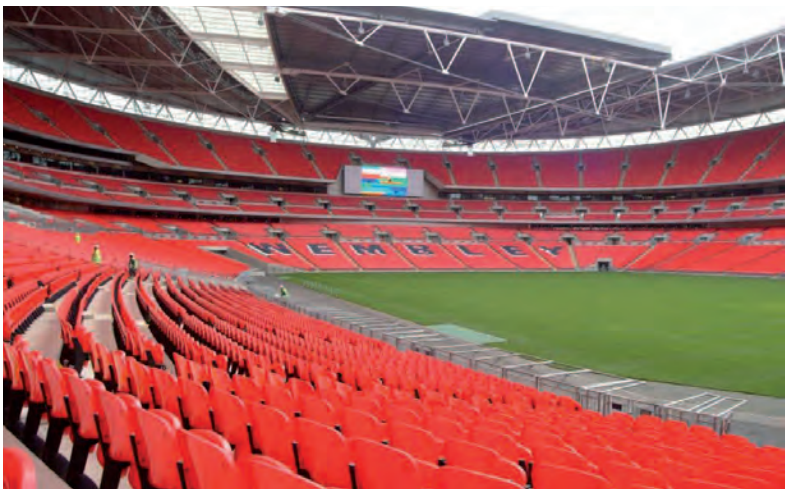
Source: Andre Konski, M.D., M.B.A., M.A. Radiotherapy is a cost-effective palliative treatment for patients with bone metastasis from prostate cancer. Int. J. Radiation Oncology Biol. Phys., Vol. 60, No.5, 1373 –1378, 2004.

Our Goal
100,000 More Survivors

Varian Medical Systems, is the world's leading manufacturer of medical devices and software for treating cancer and other medical conditions with radiotherapy, radiosurgery, proton therapy, and brachytherapy.

Varian Medical Systems' mission is to explore and develop radiation technology that protects and saves lives. Our goal is to help save 100,000 more patients each year. That's enough survivors to fill a large stadium.

Meeting this goal is not simply a matter of providing appropriate **technology;** there must be sufficient **training** and **support services.**

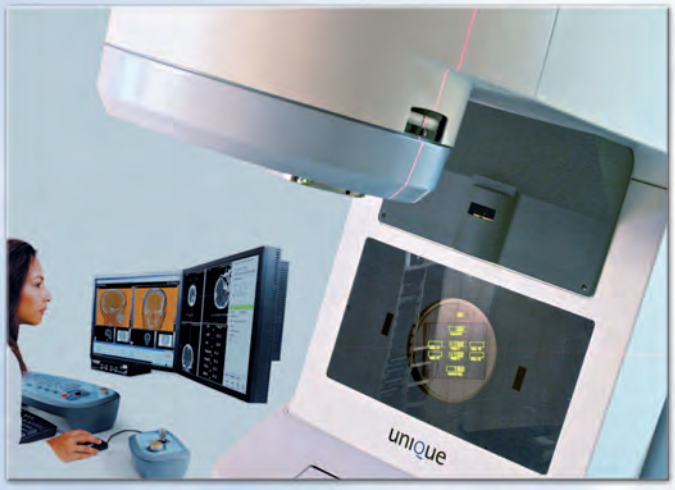


UNIQUE represents a **complete cost-effective radiation oncology solution** featuring all components and services to build a state-of-the-art radiation therapy cancer center.

- **Focused training and education programs**
  Customized programs taking care of your training needs.
  A balanced mix between classroom, on-site and clinical training.
- **Reliable and proven technology**
  Tools and capabilities for easy and clinically effective operation.
- **Comprehensive service package**
  An all-inclusive program, keeping your clinical equipment and information system running and up-to-date for multiple years.

UNIQUE™
Performance Edition

Treatment Techniques
- Conformal Treatment
- RapidArc®
- Dynamic IMRT
- Enhanced Dynamic Wedge™
- Total Body Irradiation



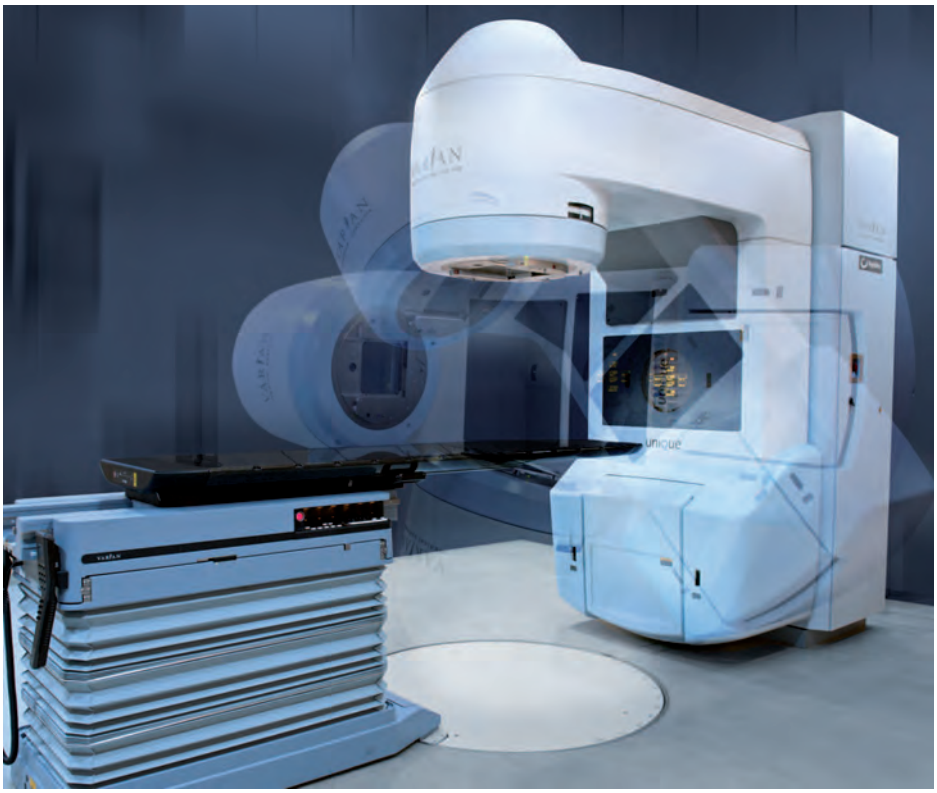
Single Photon Energy Linear Accelerator
- Small footprint
- Patient protection system
- Exact couch with carbon fiber table top

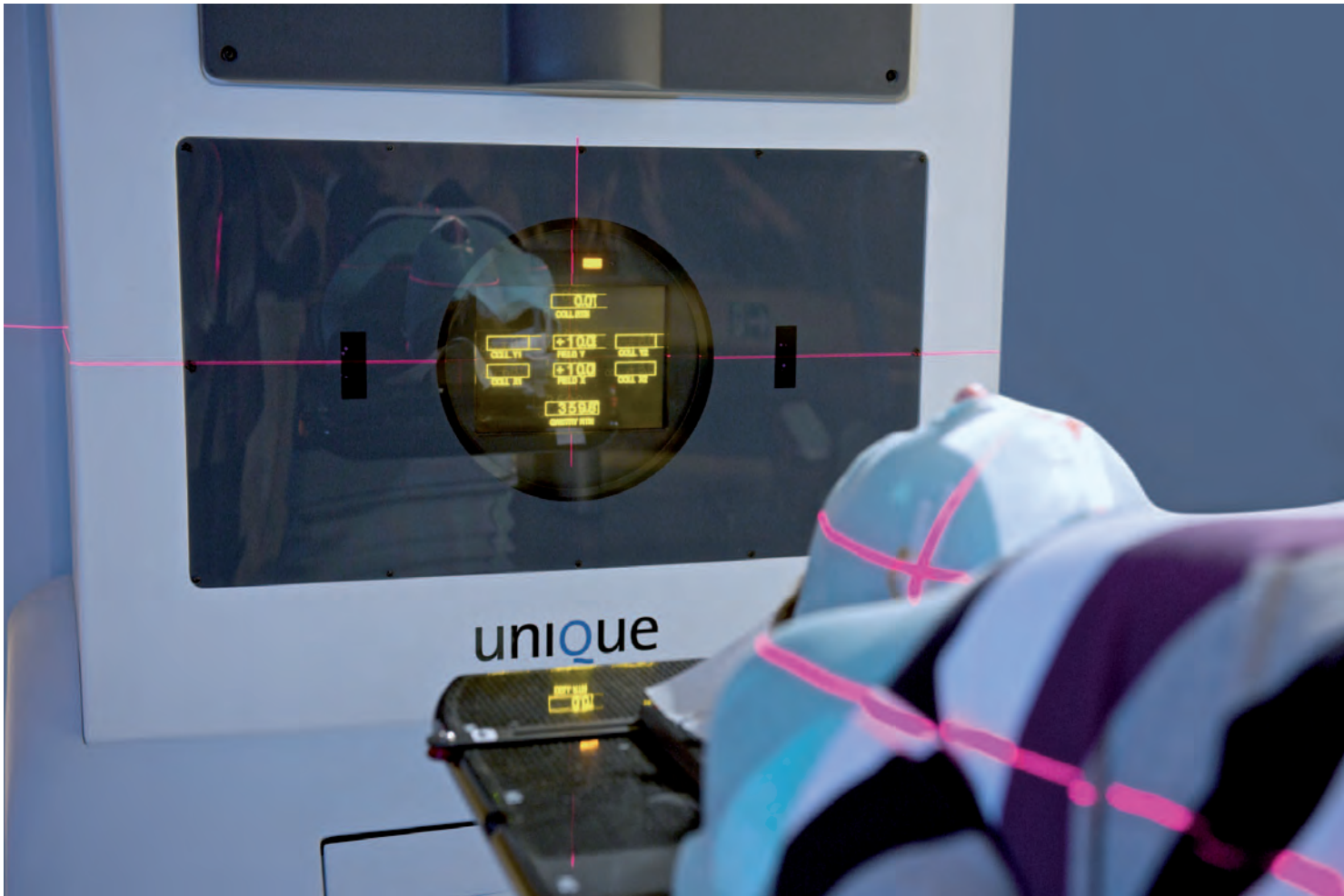
Amorphous Silicon PortalVision™ Based IGRT Tools
- Low dose, high quality MV imaging capabilities
- Online patient position verification
- Offline revision and approval
- Remote couch and imager motion

UNIQUE Oncology Software Suite, Complete Fully Integrated Solution
- Eclipse™
- ARIA

Eclipse – The complete Treatment Planning System
- RapidArc Planning
- IMRT Planning

Elegant Design
Patient-Friendly Environment



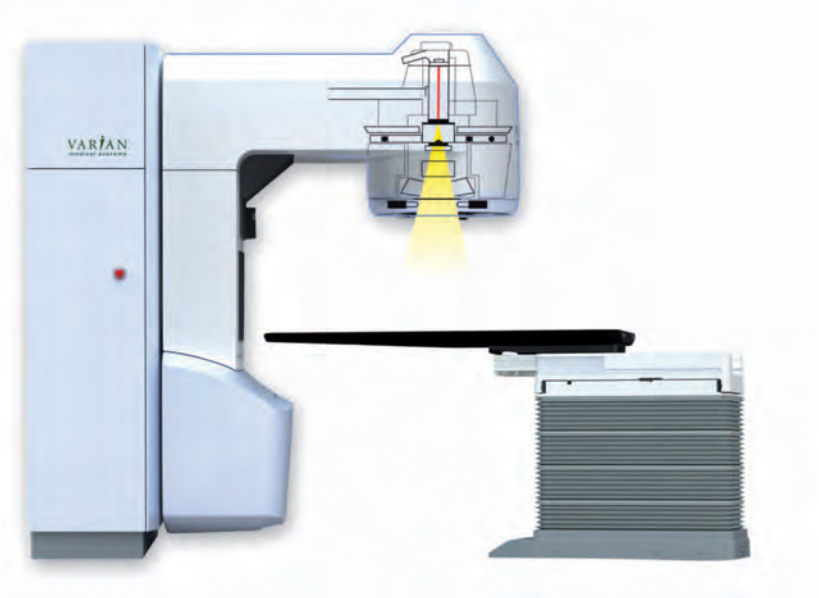


UNIQUE Accelerator

No Compromise on Quality and Safety

Reliable Solution

- Single photon energy linear accelerator
  - Robust and reliable technology
  - Magnetron based
  - Low bunker shielding needed
  - 600MU/min dose rate
  - Easy and fast installation and commissioning
- Exact couch with Indexed Immobilization®
  - Advanced carbon fiber couchtop for rigid support of patients up to 227kg
  - Motorized control of longitudinal, lateral, vertical and angular positions
  - Fully compatible with existing Indexed Immobilization accessories
- Millennium™ MLC for easy conformal beam shaping
  - 120-leaf low-leakage, high precision MLC
  - Interdigitating leaves
  - Automatic calibration procedure
  - 0.5 cm leaf resolution at isocenter

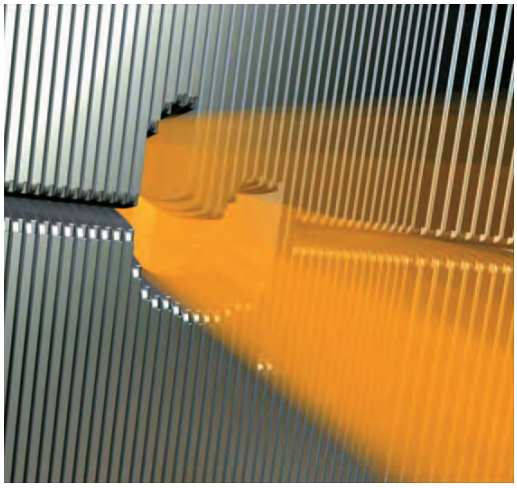


Secure Solution

The **LaserGuard™ patient protection system** significantly reduces the possibility of a potential gantry collision by detecting objects close to the collimator and automatically stopping gantry motion. This is particularly useful when performing remote gantry rotations, whether from the Clinac console or during an automated treatment sequence.

Small-Footprint Solution

UNIQUE accelerator fits in almost every treatment vault thanks to its small footprint (total length of only 269cm) and low energy (6MV).



Imaging Solution
Low Dose, High Quality

The PortalVision aS1000 flat panel detector, Varian's latest generation of Amorphous Silicon detector technology, with a matrix of 1024 x 768 pixels and an active imaging area of 30.1 x 40.1 cm^2, enables patient repositioning using mega-voltage (MV) images. Varian's extensive experience with this solid state technology has proven its **exceptional radiation hardness** and **detector lifetime.**

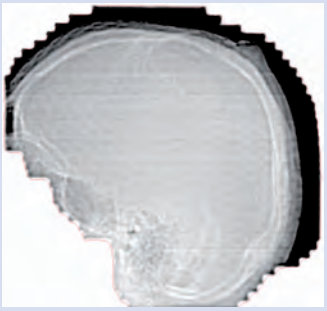
Thanks to Varian's **exclusive acquisition system** the imaging beam will be automatically stopped when sufficient dose has reached the image receptor, for high-quality imaging with radiation doses as small as 1 monitor unit (MU).

The flat panel is mounted on the **motorized Exact® arm,** which can be moved remotely from the treatment console, this offers an Unique movement range allowing imaging in almost every situation.

The imager can be positioned above the isocenter, with the Exact arm. This is ideal for **Portal Dosimetry** and machine QA (software not included).

PortalVision enables patient position verification by visualizing bony anatomy and **implanted radiopaque markers** as surrogates of soft tissue target. The markers can be detected automatically in pairs of MV images and matched with marker locations detected in the planning CT to generate couch corrections with couch translation and rotation values.

Breast Tangential <1MU



Lateral Head <1MU

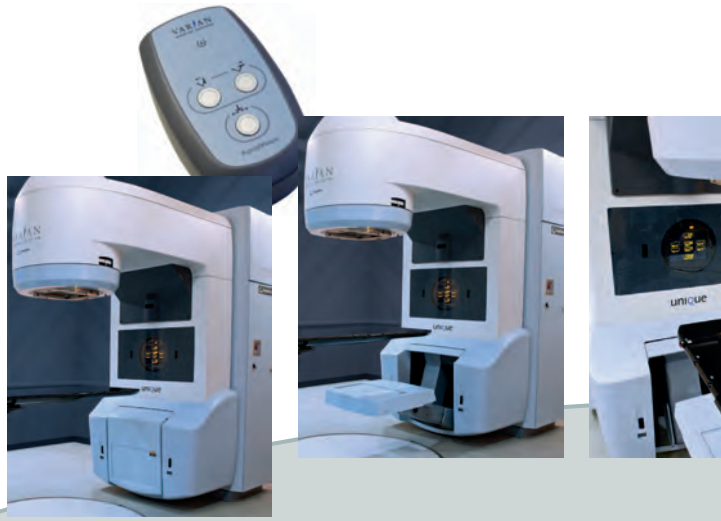
AP Pelvis <1MU

Advanced IGRT Solution

Easy and Fast Position Verification & Correction Tools

PortalVision Advanced Imaging enables patient position verification and verification of treatment field size and shape. The MV images of patient anatomy are acquired and matched with their corresponding verification images to assess the accuracy of patient setup quantitatively. It's possible to **manage day-to-day changes** in patient setup as well as changes in patient positioning during treatment.

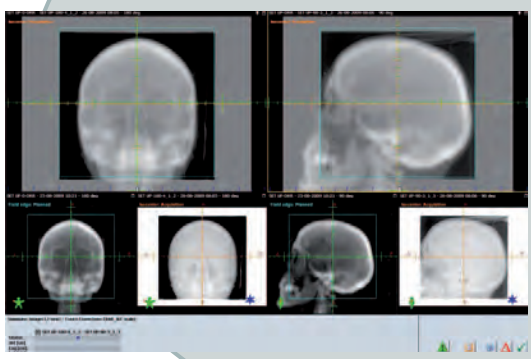
Patient position can be digitally approved and reviewed offline by the physician from his own desk.



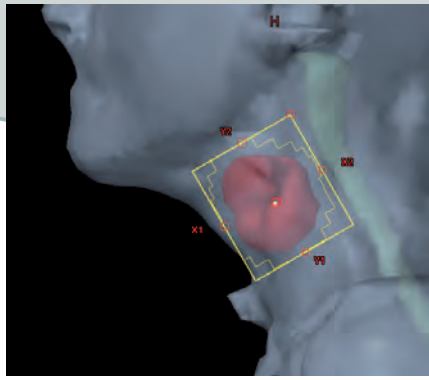
Step 1: Bring the detector remotely into acquisition position.

Step 6: Image can be approved and locked.

UNIQUE IGRT



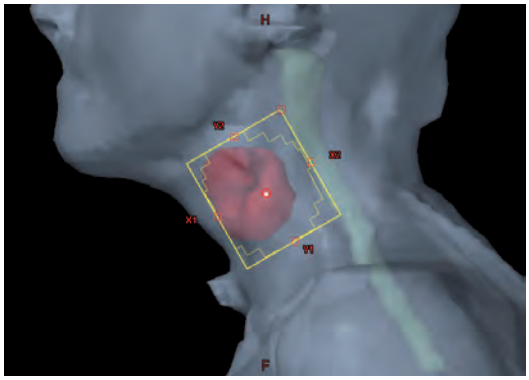
Step 5: Images are automatically saved after treatment for offline review by physicians.

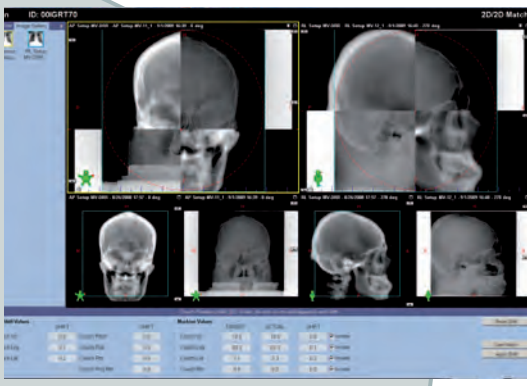


Advanced IGRT (Image Guided Radiotherapy) techniques allow **more precise tumor targeting** which aides in sparing healthy tissue.

Performance workflow

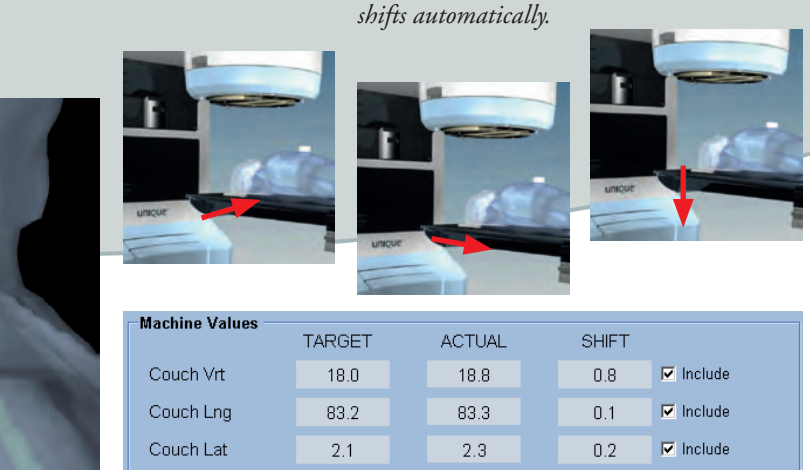
Step 2: Image acquisition before, during, or after treatment.





Step 3: Match portal images with their respective reference images. The pair of images are linked so that any shift based on translation and rotation are applied to both.

Step 4: Calculate shift. Corrections are sent to the treatment couch and the table shifts automatically.



Machine Values	TARGET	ACTUAL	SHIFT	
Couch Vrt	18.0	18.8	0.8	Include
Couch Lng	83.2	83.3	0.1	Include
Couch Lat	2.1	2.3	0.2	Include

All activities, such as sending corrections to the treatment couch and extending/retracting the imager can be performed remotely from the treatment console – greatly **streamlining the clinical workflow.**

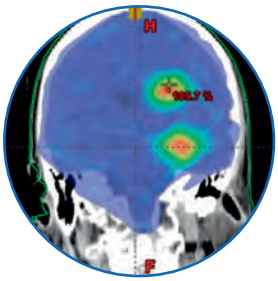
RapidArc
Extensive Clinical Application

RapidArc® represents a revolutionary breakthrough in cancer treatment that radically reduces treatment time. Most cancers treatable with radiation can be treated faster with Varian RapidArc radiotherapy technology. RapidArc delivers the **precise dose distribution** and conformity of IMRT and IGRT in a **fraction of time.**

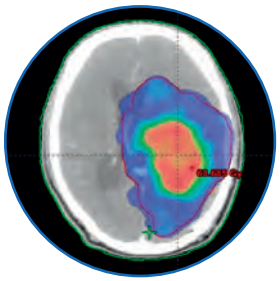
RapidArc has become **routine technology** in many centers. **Hundreds of customers** worldwide currently use RapidArc technology to **treat thousands of patients.** Community centers and large hospitals alike use it regularly to treat the most commonly occurring cancers as well as all the demanding cases.

By simultaneously shortening treatment times and **improving accuracy, RapidArc technology represents a significant advance for improving the patient experience** and **increasing the efficiency of radiation oncology departments.**

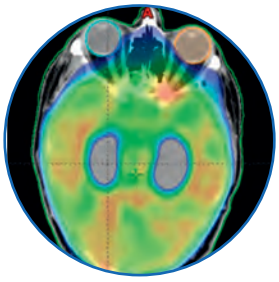
RapidArc is the reference in Volumetric Modulated Arc Therapy (VMAT) and uses Dynamic MLC, variable dose rate, and variable gantry speed to generate homogenous dose distributions for targets and reduced dose for organs at risk. Typical delivery time is less than two minutes with low MUs.



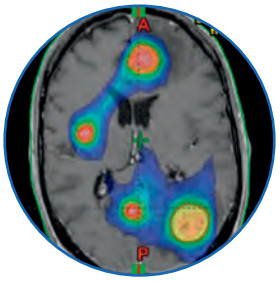
Brain SRT – Multiple Metastases and Whole Brain
2 arcs, 151 sec



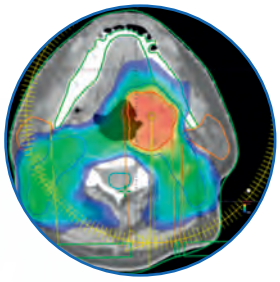
Glioblastoma
2 arcs, 150 sec



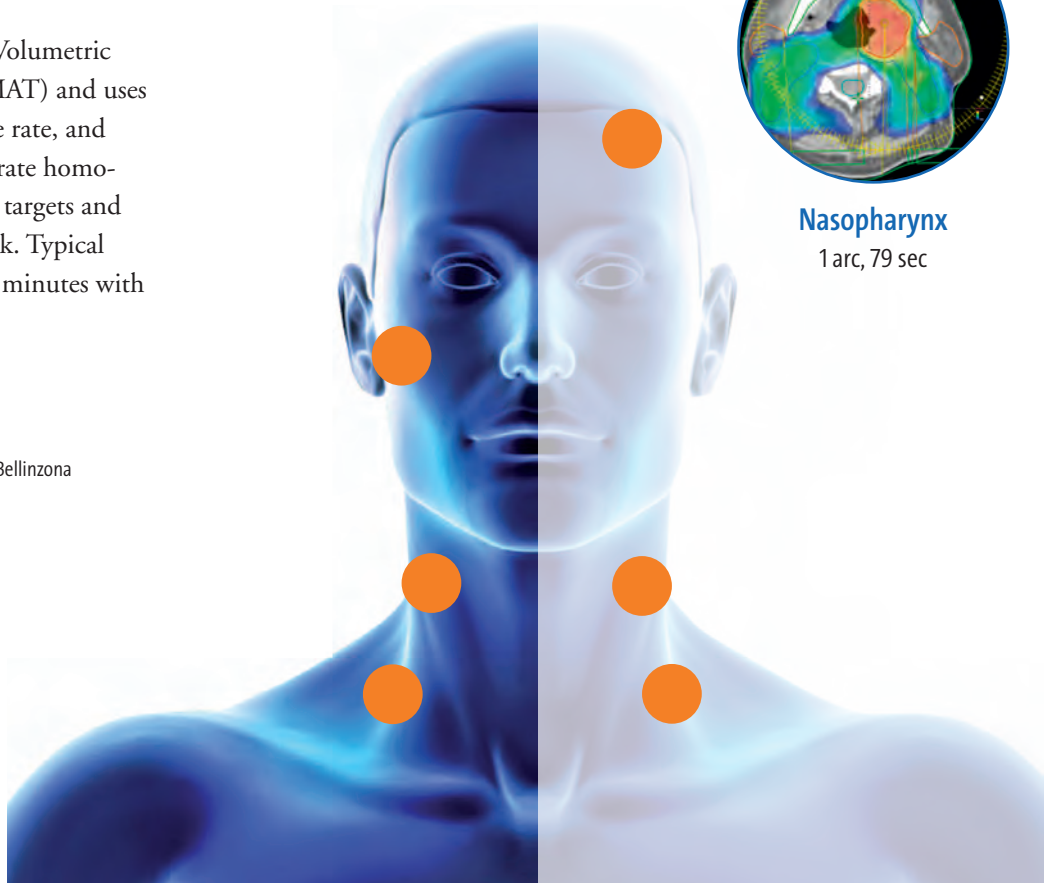
Prophylactic Cranial Irradiation with Hippocampus Sparing
2 arcs, 155 sec



Brain SRS – Multiple Metastases
3 non-coplanar arcs, 330 sec

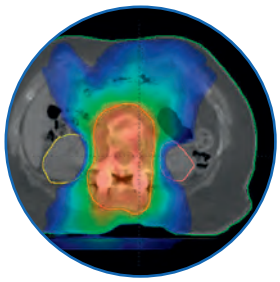


Nasopharynx
1 arc, 79 sec

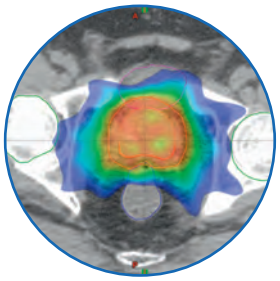


Data Courtesy:
VU Medical Center, Amsterdam
Istituto Oncologico della Svizzera Italiano, Bellinzona
Rigshospitalet, Copenhagen
Centre G.F. Leclerc, Dijon
Yashoda Hospital, Hyderabad
National Guard Health Affairs, Jeddah
CRLC Val d'Aurelle, Montpellier
Südharz Krankenhaus, Nordhausen
Humanitas Institute, Rozzano-Milano
University Hospital Zurich

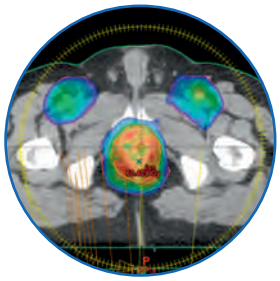
Legend:
Number of arcs, beam-on time/fx



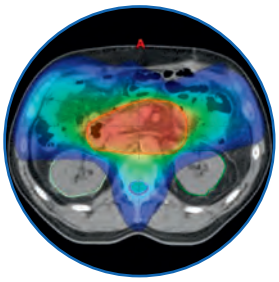
Chordoma
1 arc, 74 sec



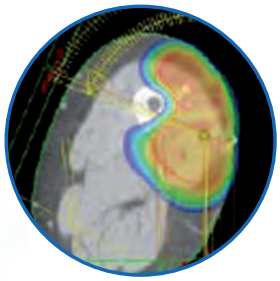
Prostate
1 arc, 75 sec



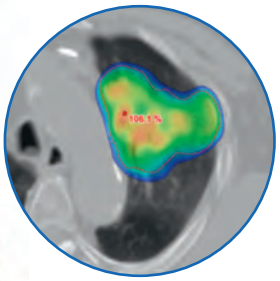
Anal Canal
2 arcs, 170 sec



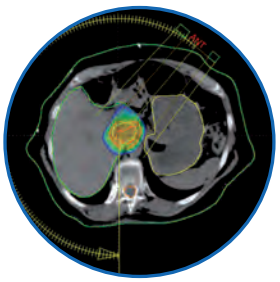
Pancreas
1 arc, 74 sec



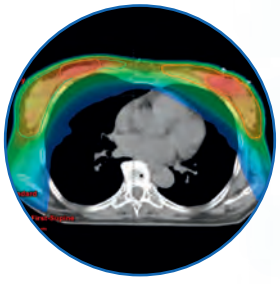
Soft Tissue Sarcoma
3 partial arcs, 103 sec



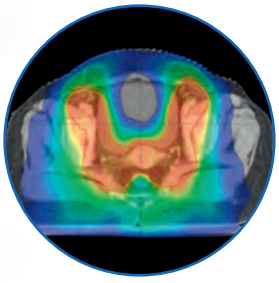
Non-Small Cell Lung Carcinoma SRT
2 arcs, 210 sec



Liver
1 partial arc, 112 sec



Bilateral Breast
2 arcs, 150 sec



Cervix Uteri
1 arc, 74 sec

A Complete and Fully Networked Solution
Don’t Ask for Less

ARIA Oncology Information System
The Distinct Solution

ARIA is a comprehensive information system that addresses the clinical, administrative, and imaging needs of the oncology department. ARIA streamlines departmental operations by eliminating redundant data entry and makes the treatment process faster and easier by providing a single user interface that integrates record and verify, the multileaf collimator, and PortalVision. The different UNIQUE radiation oncology solutions feature the main ARIA applications.

Eclipse Treatment Planning System
Total Planning Power

Eclipse is an advanced, windows based treatment planning system. It provides excellent and intuitive automatic and manual contouring and image registration tools, including automatic image registration based on a mutual information algorithm. It supports the different planning methods such as 3D conformal static and arc planning, inverse planning for intensity modulated radiotherapy (IMRT) and RapidArc® planning. The system offers the high quality dose calculation algorithm AAA (Analytic Anisotropic Algorithm). Eclipse is focused to support the clinical workflow and uses clinical protocols to speed up the planning part and to enable you to use class-solutions for the different clinical indications.

Training Solution
The Answer to All Your Trainings Needs

Training is an essential part of developing a successful oncology practice. At Varian, we have a strong commitment to our customers; we make training and education a top priority.
Every year we provide training to thousands of physicians, physicists, dosimetrists, radiographers and administrative personnel at customers' treatment centers and at key Varian education centers located worldwide.

Wherever you are in the world, Varian offers:

- Comprehensive training programs in the safe and effective use of our systems
- Product support by training and clinical experts consisting of certified Radiation Professionals with extensive clinical expertise
- Committed training coordinators working with you to develop a comprehensive program
- Industry leader in end-to-end solution training
- Specialized training and continuous education

Included in the standard training solution Varian organizes Clinical Schools ad Reference Centers with a long-standing experience.

An example is **RapidArc/IMRT Clinical School.** Clinical Physicists and Oncologists from the host hospital will prepare the attendees for clinical implementation of Varian's advanced treatment techniques.
The program includes:

- Clinical sessions
- Hands-on treatment planning
- Patient and machine QA
- Demonstration of patient treatment

Customer Support Services
Protecting Your Investment

In more than 50 years of service to healthcare providers, Varian's Customer Support Services have remained a testament to service innovation at every level. Our worldwide support team is dedicated to providing local support for our products whenever and wherever needs arise. From site planning to service support agreements, training solutions, on-site support and Help Desk telephone support, Varian offers programs that keep your products and personnel operating at peak efficiency.

SmartConnect™

Experts at your shoulder

SmartConnect puts a team of first-rate clinical and technical experts at your command. With the exclusive remote monitoring capabilities of SmartConnect, Varian experts can see exactly what you see and work with you as if they were in the same room with you. It provides proactive and predictive service capabilities and helps ensure that the UNIQUE system is performing at an optimum level. SmartConnect allows Varian to provide the customer with remote application and technical support and helps to minimize clinic downtime.

Fine Beam Matching

The new UNIQUE system can be beam matched to your already installed Varian Clinac® or Trilogy™ system to allow for easy movement of patient treatment plans between machines of similar energy.

Condition may apply. Contact your local service organization for more information.

Service Solution
Stay within Budget

Comprehensive Service Package*

The comprehensive service package will protect your UNIQUE system against any unexpected costs or downtime and help you to stay within budget. It will not only cover the UNIQUE accelerator, but also ARIA and Eclipse, starting with the date of acceptance lasting for a period of multiple years.

The comprehensive service package includes

- **Parts coverage, including glass and vacuum**
  Varian supplies all parts necessary to keep the equipment functioning properly, including all glass and vacuum parts and imaging panel.
- **Periodic maintenance inspections**
  Varian will carry out all regular periodic maintenance inspections each year.
- **Maintenance releases and updates**
  Varian will provide maintenance releases for the software and firmware on the UNIQUE accelerator, ARIA and Eclipse.
- **Highest level of support**
  - **Help Desk**
    Varian will provide applications, technical, and clinical support for the UNIQUE Package. Specialists provide e-mail and multilingual phone support for Varian customers worldwide.
  - **Remote Service**
    SmartConnect enables remote monitoring and diagnosis of equipment performance and allows for remote installation of updates and upgrades. It provides proactive and predictive service capabilities and helps to ensure that the UNIQUE system is performing at an optimum level.
  - **On-site support**
    Varian will provide on-site field service support for issues that cannot be resolved by helpdesk or through remote service support.

* Following conditions apply. Service agreement does not cover damage relating to environmental changes, abuse, neglect and others. Comprehensive service package may not be available in some countries.

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