

(un)conventional

PERSONALIZATION • PERFORMANCE • CONFIDENCE



ETHOS
HYPERSIGHT

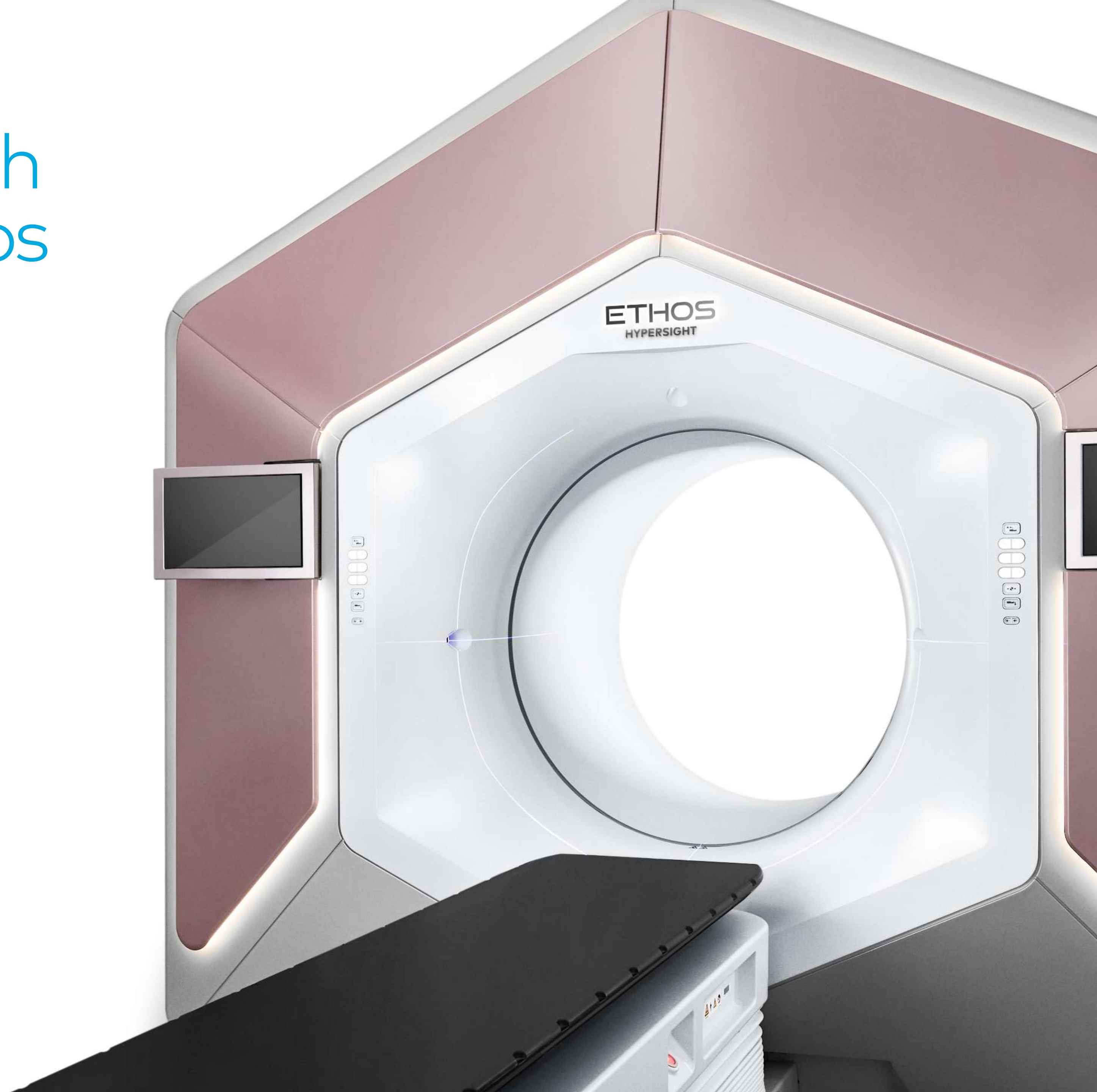
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Power new victories with the adaptability of Ethos

At Varian, a Siemens Healthineers company, we understand the challenges of today: providing personalized cancer care efficiently, choosing the right treatment for each patient, and adapting to how the patient presents each day.

That's why we are continually innovating to ensure our solutions and world-class services are seamlessly integrated—elevating every clinician's ability and confidence in helping patients win their fight against cancer. Our dedication to intelligent innovation continues with Ethos.

The Ethos system is designed to enhance and streamline radiotherapy treatments by offering new workflows to meet every patient's needs—making adaptive therapy as easy as standard IGRT and consistently delivering advanced, high-quality cancer care for every patient.



Ethos is redefining adaptive therapy

The consistent delivery of radiation treatment according to the desired plan is a major objective of the radiotherapy clinician.

Clinicians face many challenges: the radiation target may vary in size or shape, or the patient anatomy may experience shifts or changes—making the optimal treatment plan difficult to execute. For this reason, adaptive therapy was developed to better equip radiotherapy to address these issues and provide more precise treatment to patients.

With Ethos, we are bringing AI-driven workflows to adaptive therapy and further efficiency to the treatment planning and delivery process—making online adaptive therapy possible in a traditional radiotherapy time slot. Ethos offers you the choice to deliver online or offline adaptive therapy, or traditional IGRT treatment, specifically tailored to each and every one of your patients.



PERSONALIZATION

Ethos is a patient-tailored solution allowing clinicians to choose the best treatment option for their patients, as well as adapt patient daily changes regardless of department size or patient mix. Ethos delivers flexibility in treatment technique—adaptive or IGRT, IMRT or VMAT—offering multiple options for your patients. We know patients are unique, so choose a solution that adapts to their individual needs.

PERFORMANCE

Whether adaptive or IGRT, experience exceptional performance with Ethos. In addition to providing flexible, high-quality treatment, Ethos optimizes clinical and operation efficiencies with features like ARIA co-existence, AI planning, and AI segmentation—making these treatments accessible to more patients.

CONFIDENCE

Ethos aims to inspire confidence by allowing clinicians to see anatomy more clearly, act upon anatomical changes, plan accurately, and deliver treatment efficiently. Clinicians using Ethos continue to see the value for their patients as usage of the unique adaptive features grows among the user base. As Ethos builds confidence around adaptive therapy, we look toward a better future of advanced cancer care.

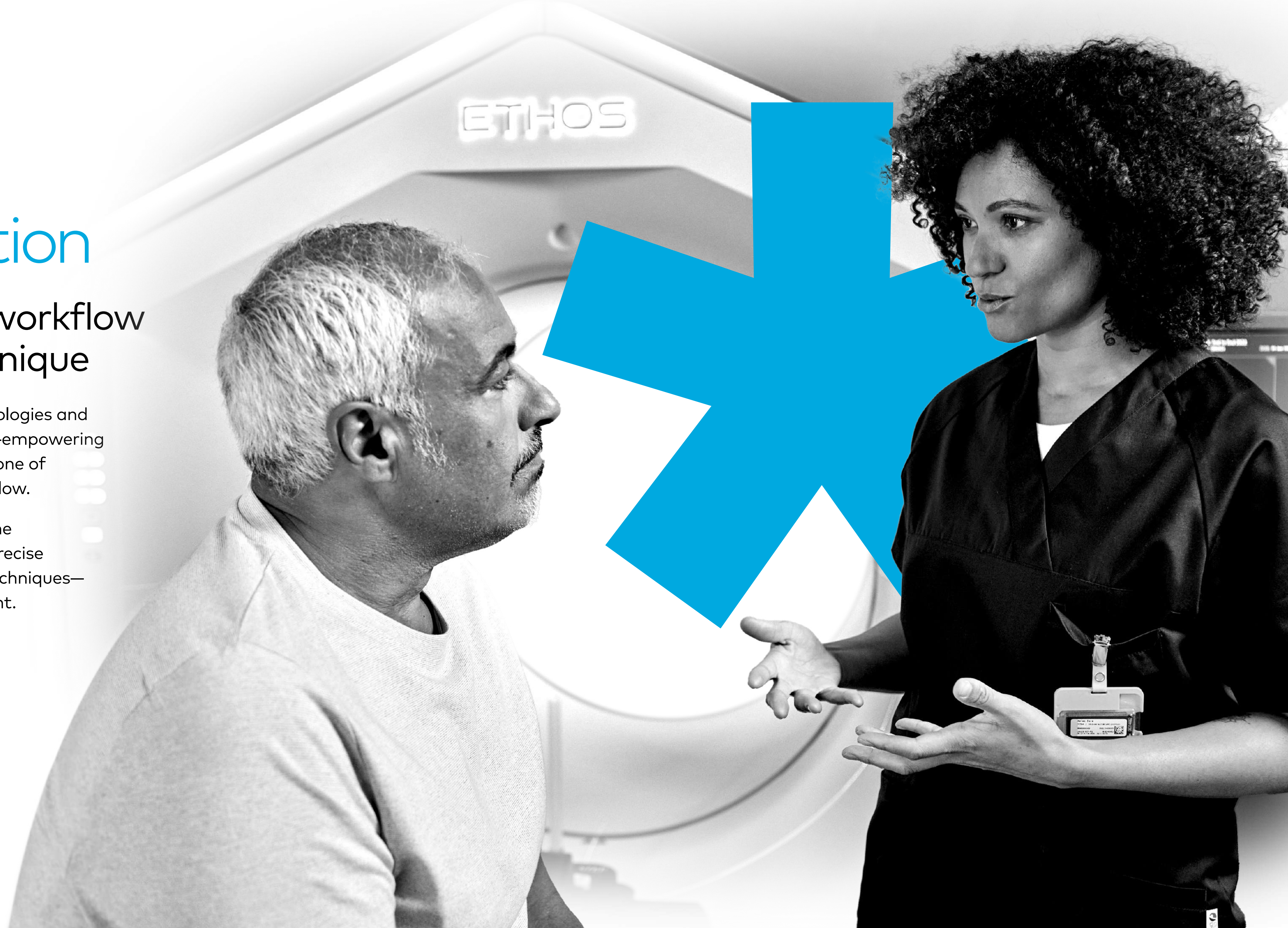


Personalization

Choosing the right workflow and treatment technique

Ethos therapy unites leading-edge technologies and artificial intelligence with your expertise—empowering you to deliver personalized care to every one of your patients through an AI-driven workflow.

Users can choose between online or offline adaptive as well as IGRT treatment for precise delivery of IMRT and RapidArc (VMAT) techniques—whichever is most suitable for your patient.



Comprehensive, AI-driven adaptive therapy

Ethos therapy is an integrated suite of tools for the entire adaptive journey. Efficient technologies and guided workflow can facilitate decision making. This is made possible by the streamlined design and AI-driven approach which captures each physician's objectives and intent prior to each personalized treatment.

For more information, clinicians can leverage diagnostic MR, PET, and CT images during the planning and treatment process. Multi-modality images can be available at any stage of the workflow.

"Our goal is to provide treatments that don't require our patients to adapt to us but use technology to make the experience as convenient and simple as possible."[†]

—Siobhan Graham

Head of Radiotherapy at Queen's Hospital, Romford UK



Performance

ARIA co-existence for efficient departmental administrative tasks

This newly developed feature allows Ethos Treatment Management system to communicate with ARIA Oncology Information System for critical information exchange. This can provide seamless clinical treatment data capture, treatment progress updates and support departmental administrative tasks, such as billing.

With ARIA co-existence, reporting and management of IGRT treatments is unified with other Varian linacs by having treatment data in a single repository to facilitate an efficient administrative experience.



Artificial Intelligence enabling treatment planning consistency and efficiency

Whether working on Ethos initial planning, online adaptive, offline adaptive as well as IGRT workflows, all cases can benefit from the efficiency of Ethos AI segmentation. AI models are available for the most common structures, including: head & neck, abdomen, thorax, bowel, and pelvis anatomical regions.

Ethos AI treatment planning, powered by Intelligent Optimization Engine, can generate consistent high-quality initial and online adaptive plans. This new and innovative optimization algorithm takes care of the traditional optimization tasks so you can focus on meaningful clinical goals.

Additionally, the AI tools in Ethos are designed to remove repetitive and time-consuming efforts to help you dedicate your time to making clinical decisions.

Class-leading imaging and delivery with patient-centered comfort and safety

Ethos leverages the efficiency of Varian's ring gantry platform—enabling fast positioning, imaging, verification, and treatment delivery—minimizing a patient's time on the table. When married with the optional HyperSight imaging solution, Ethos provides leading CBCT imaging capabilities.

Dedicated, patient-specific QA

MobiusAdapt is a calculation-based QA solution that is integrated into the adaptive workflow to provide an efficient and sensitive* online QA solution. MobiusAdapt can be used for Initial planning QA and adaptive planning QA at the console, maintaining an independent QA check.

This independent adaptive plan QA can be performed on-demand, without impeding treatment workflow.

*Kry, SF, et al. Independent recalculation outperforms traditional measurement-based IMRT QA methods in detecting unacceptable plans. *Med Phys*. 2019 Aug;46(8):3700-3708

Confidence

Knowing that you are able to offer the best possible treatment to your patients—as their anatomies change daily—brings confidence to the care team.

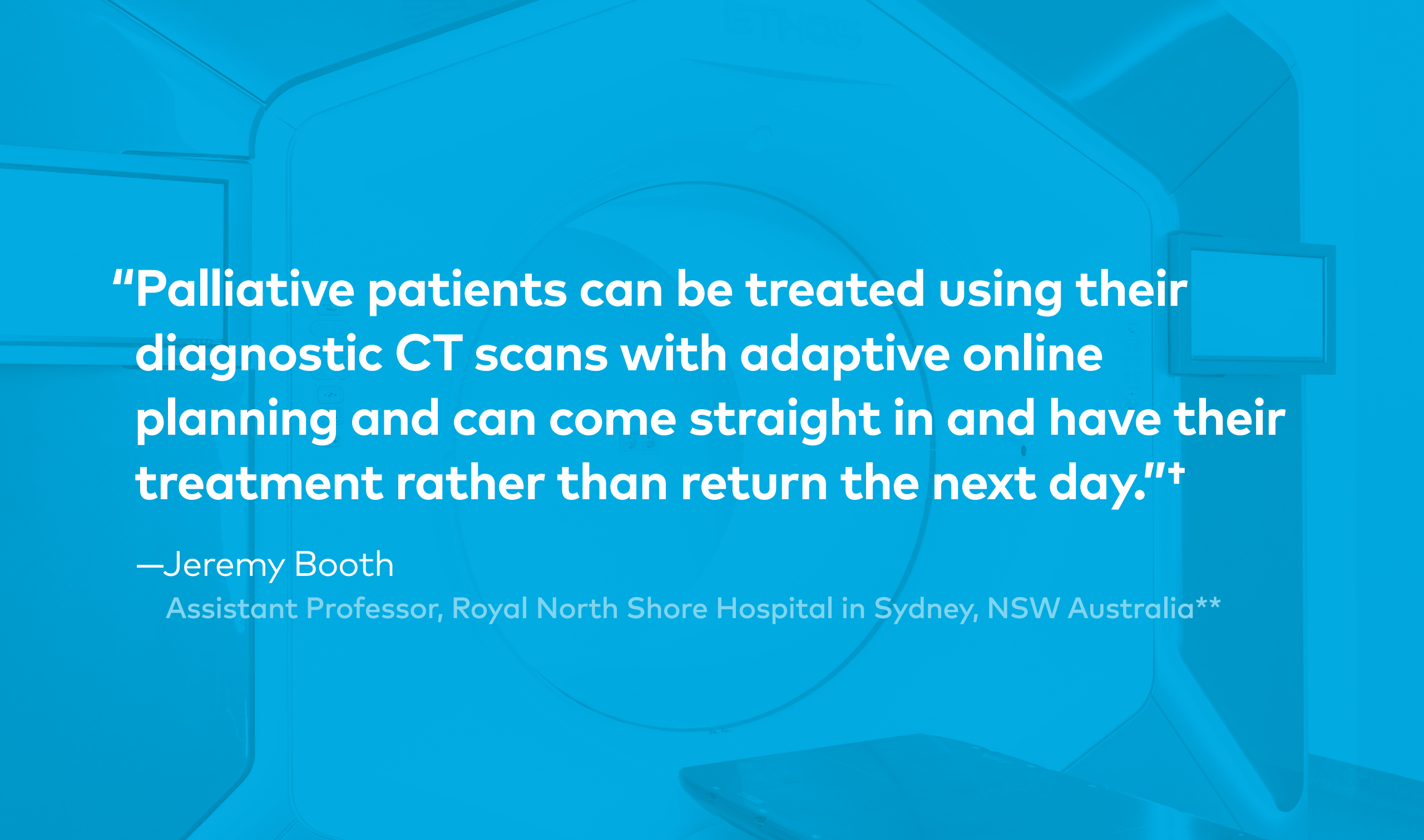
From traditional to hypofractionated treatment, Ethos is designed to provide high quality plans efficiently.

HyperSight* adaptation increases precision in online dose calculation and enables radiotherapy workflow innovation

HyperSight-enhanced CBCT imaging quality has the potential to help clinicians see more—making their decisions easier and shortening the time spent on adaptive steps.

Ethos allows direct dose calculation on HyperSight CBCT images. The CT-like HU accuracy and uniformity eliminates the need for the traditional synthetic CT (sCT) used on online adaptive plan generation. Direct dose calculation on HyperSight may increase the user's confidence in the adaptive planning results and enable significant radiotherapy workflow innovations.

*HyperSight is an optional feature on Ethos 2.0



"Palliative patients can be treated using their diagnostic CT scans with adaptive online planning and can come straight in and have their treatment rather than return the next day."[†]

—Jeremy Booth

Assistant Professor, Royal North Shore Hospital in Sydney, NSW Australia^{**}

Enables efficient offline adaptation

HyperSight adaptation may further simplify the offline adaptive workflow with direct dose calculation on prior session CBCT images, direct utilization of session structure sets, and automatic plan generation. This integrated suite of tools may eliminate the need for repeat CT imaging and contouring for new treatment plan generation, thereby reducing patient wait times for the new treatment plan.

^{**}The statement by Varian's customer described here is based on results achieved in the customer's unique clinical setting. Because there is no "typical" clinical setting and many variables exist, there is no guarantee that other customers will achieve the same results.

Automated evaluation to guide decision-making—allowing robust, enhanced treatment monitoring

Treatment monitoring provides longitudinal treatment evaluation facilitated by automated daily delivered dose reconstruction, and dose accumulation and forecasting, which is traditionally resource intensive when done manually. This allows care teams to see if OAR doses or target coverage are deviating from clinical goals due to systematic changes, e.g., patient weight loss. Now, clinical teams have easy access to the treatment progress information needed for making informed clinical decisions.

Elevate your confidence with clinical experience

In hypofractionated or SBRT treatments, clinicians are looking for opportunities to tighten margins, increase dose conformity, and guarantee high dose delivery as initially planned. Therefore, having a system that can provide efficient and robust adaptive radiotherapy can elevate the confidence of offering such a program in your clinic.

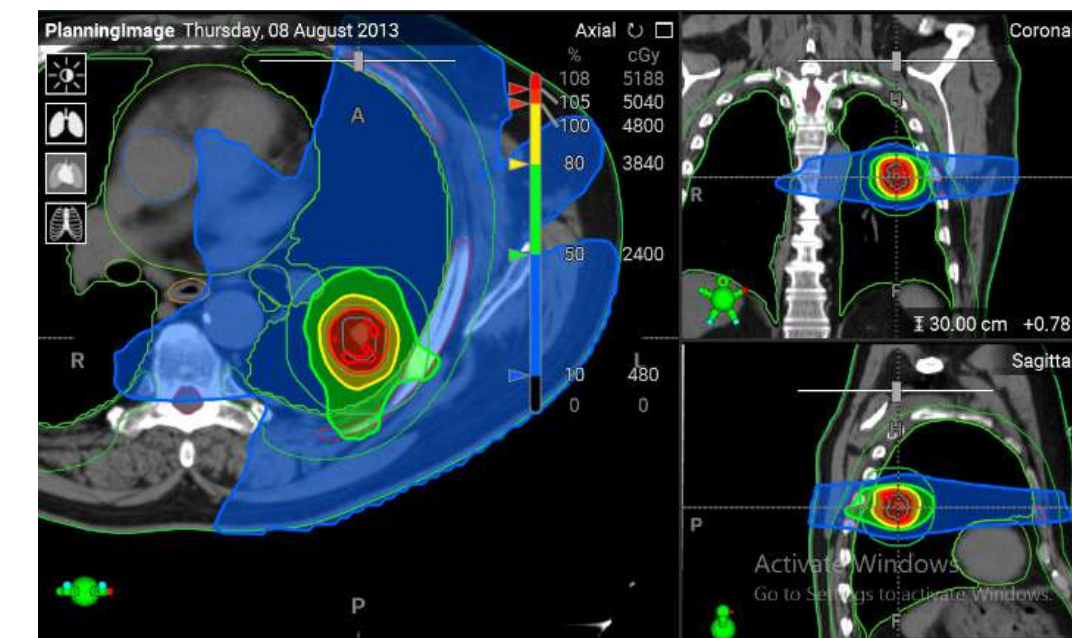
Ethos has shown a 4x increase in SBRT with adaptive treatment for pancreatic cancer compared to IGRT, 14% relative increase in hypofractionated prostate treatments compared to IGRT, and 2.8x increase in lung SBRT compared to IGRT. Based on 3 years of clinical experience, we have seen over 86% of adaptive plan selection over scheduled plan.

Ethos offers a set of tools focused on, but not limited to, hypofractionated treatment: highly conformal dose distribution, fine dose resolution and various beam geometries. For lung and esophagus cases, an AI generated beam geometry tool can offer optimal beam entry to protect OARs even further.

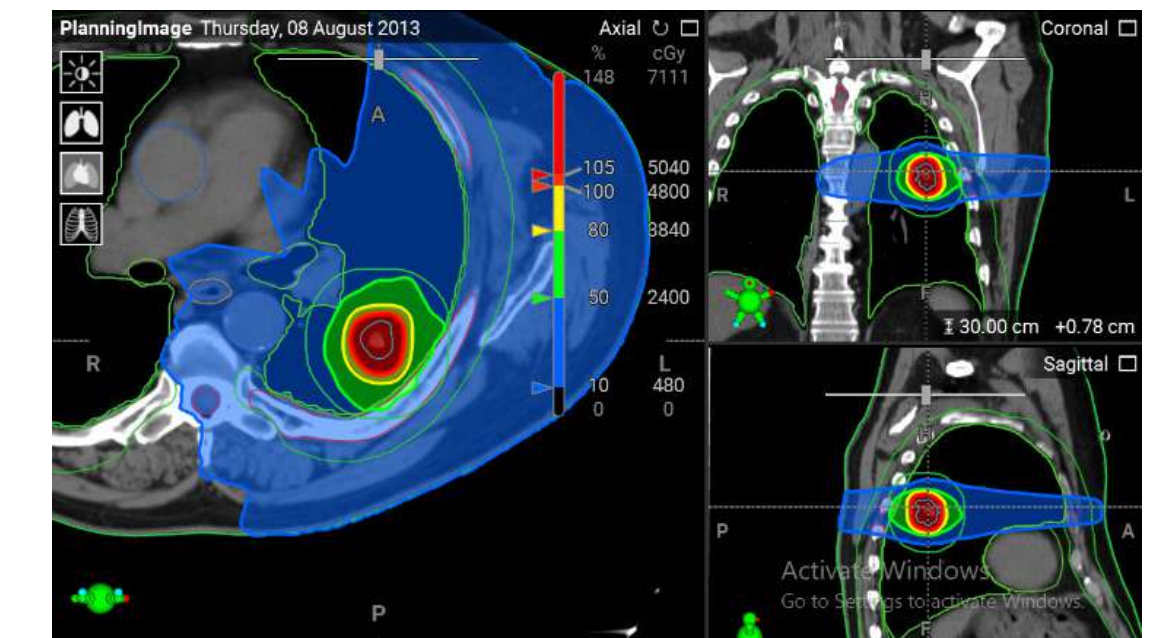
“Although adaptive takes somewhat longer to set up than IGRT, we’ve already reduced the time slot down to about 20 minutes. If we can draw from the precision advantages of adaptation to spare healthy tissue while using SBRT with five fractions for prostate, we’ll really be getting ahead of the curve.”†

—Dr. Annette Kretzler

Director of Radiation Oncology, Henry Ford Allegiance, Michigan USA



Standard Dose Distribution



Highly Confrontal Dose Distribution

Impacting lives by elevating care through intelligent innovation

At Varian, a Siemens Healthineers company, we are relentless in the pursuit of our vision of creating a world without fear of cancer.

From initial screening and high-quality CBCT imaging to treatment delivery and survivorship, our commitment to helping you streamline workflows and personalize your patient care through a comprehensive, flexible approach to radiotherapy treatment—whether adaptive or conventional radiotherapy—continues with the integration of Ethos into our entire ecosystem.

Harness the power of Ethos, and all our intelligent technologies and innovative therapies, to help elevate your ability and confidence in delivering world-class cancer care—for every patient, everywhere.



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Certain features are optional. Please speak with your sales personal for more information.

* Institution has previously received grant or other financial support from Varian

Intended Use Summary

Varian Medical Systems' linear accelerators are intended to provide stereotactic radiosurgery and precision radiotherapy for lesions, tumors, and conditions anywhere in the body where radiation treatment is indicated.

Important Safety Information

Radiation treatments may cause side effects that can vary depending on the part of the body being treated. The most frequent ones are typically temporary and may include, but are not limited to, irritation to the respiratory, digestive, urinary or reproductive systems, fatigue, nausea, skin irritation, and hair loss. In some patients, they can be severe. Treatment sessions may vary in complexity and time. Radiation treatment is not appropriate for all cancers.

Medical Advice Disclaimer

Varian as a medical device manufacturer cannot and does not recommend specific treatment approaches. Individual treatment results may vary.

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