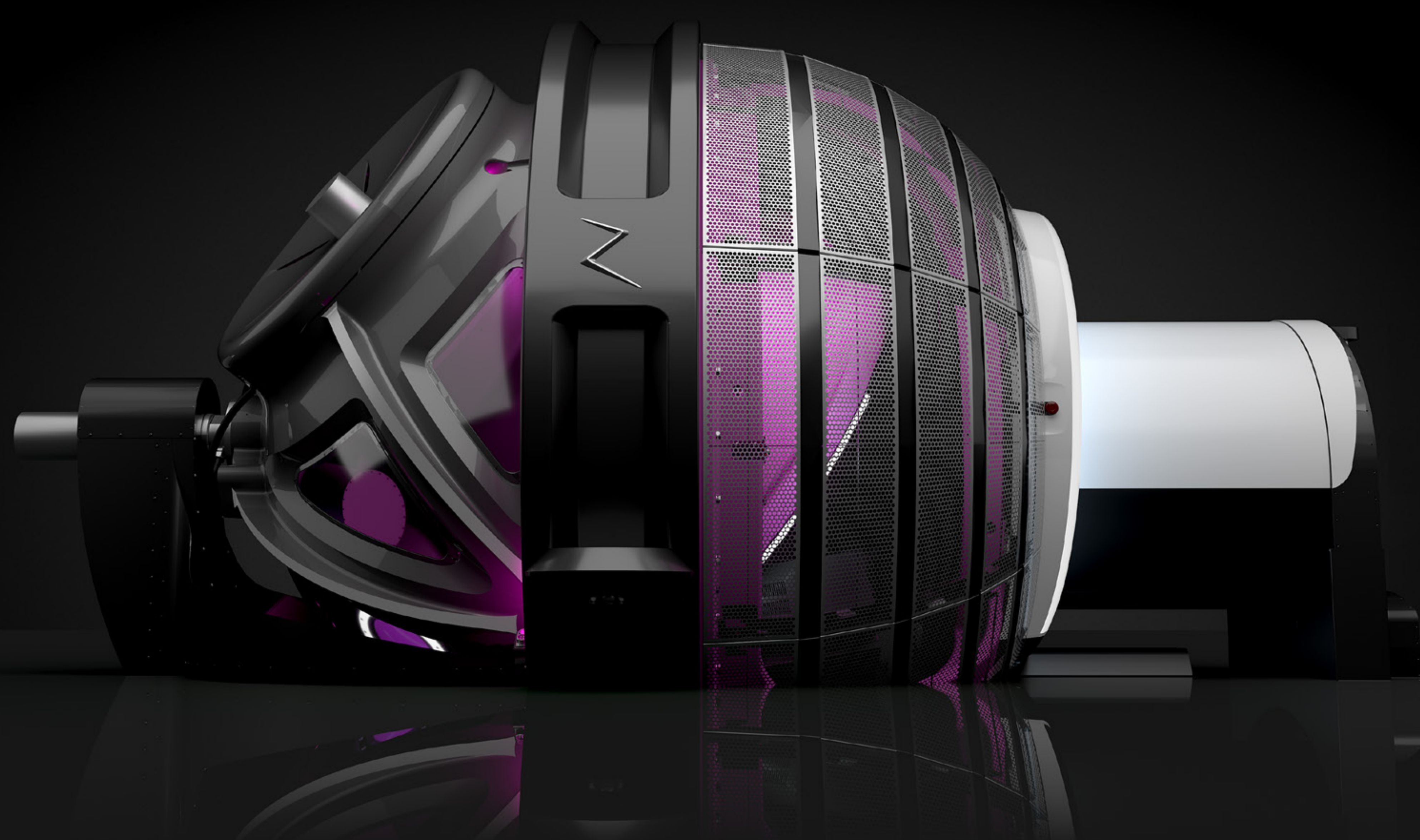
GYROSCOPIC RADIOSURGERY FOR THE BRAIN

TWO MILLION.

Every year more than **two million** brain tumor patients worldwide are potential candidates for stereotactic radiosurgery. Yet with the significant costs and complexities of historical SRS delivery, only 150,000 patients receive such treatment.

THAT WAS THEN.
THIS IS NEXT.

ZAP-X® GYROSCOPIC RADIOSURGERY™

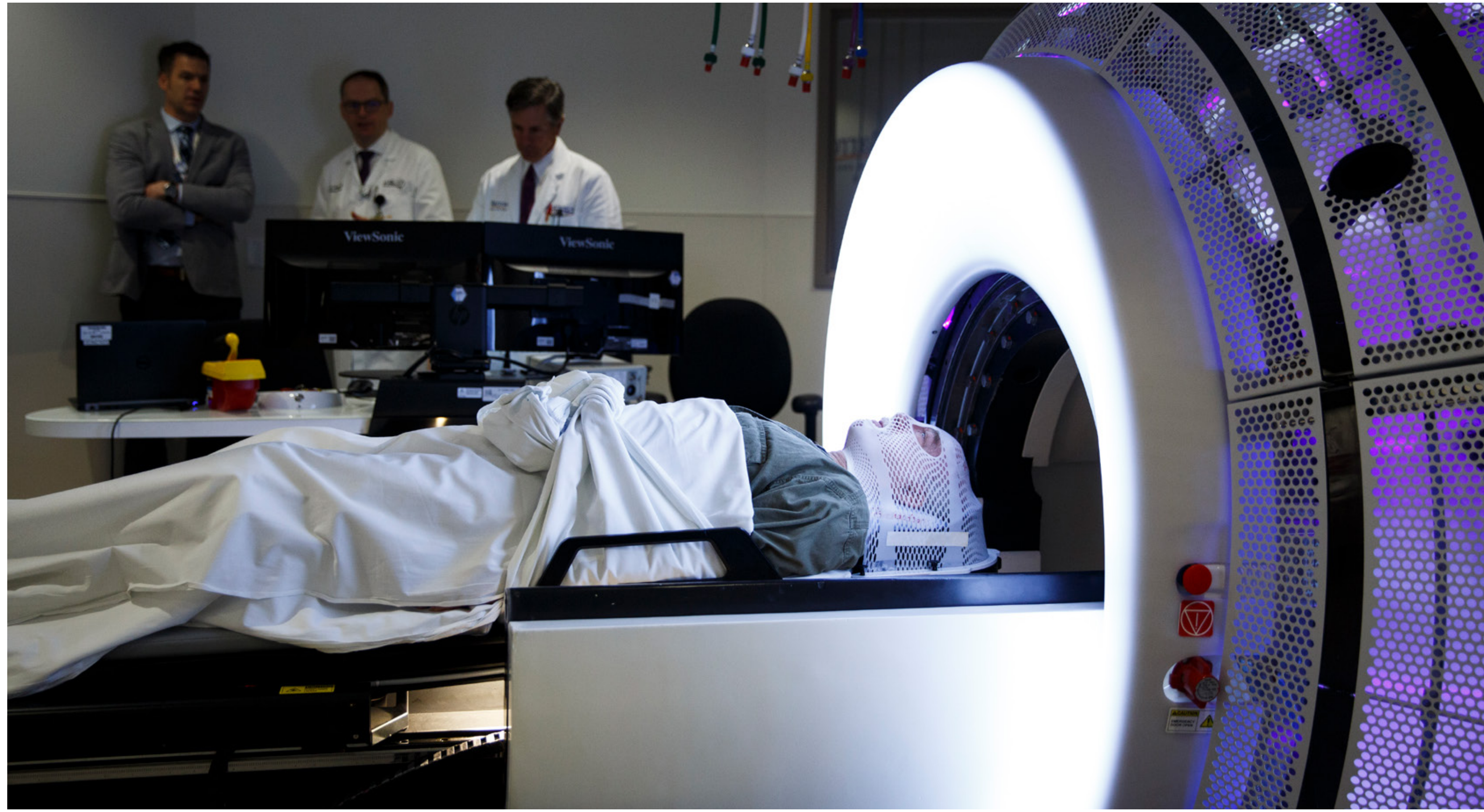


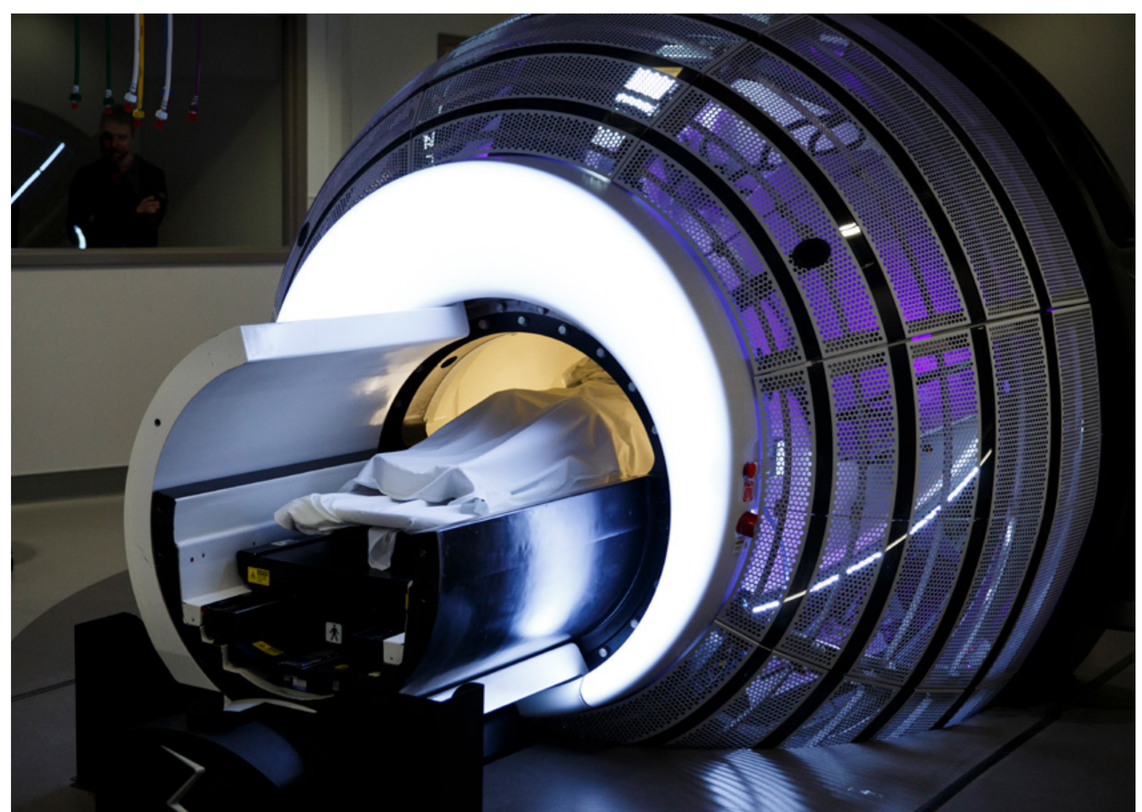
ZAP-X OPENS NEW FRONTIERS IN MODERN RADIOSURGERY

Integrating a first-in-kind self-shielded design with linear accelerator-based delivery, ZAP-X® is a dedicated intracranial SRS system focused on accessibility, ease-of-use, and world class beam dosimetry.

ZAP-X brings SRS to more patients in more places.

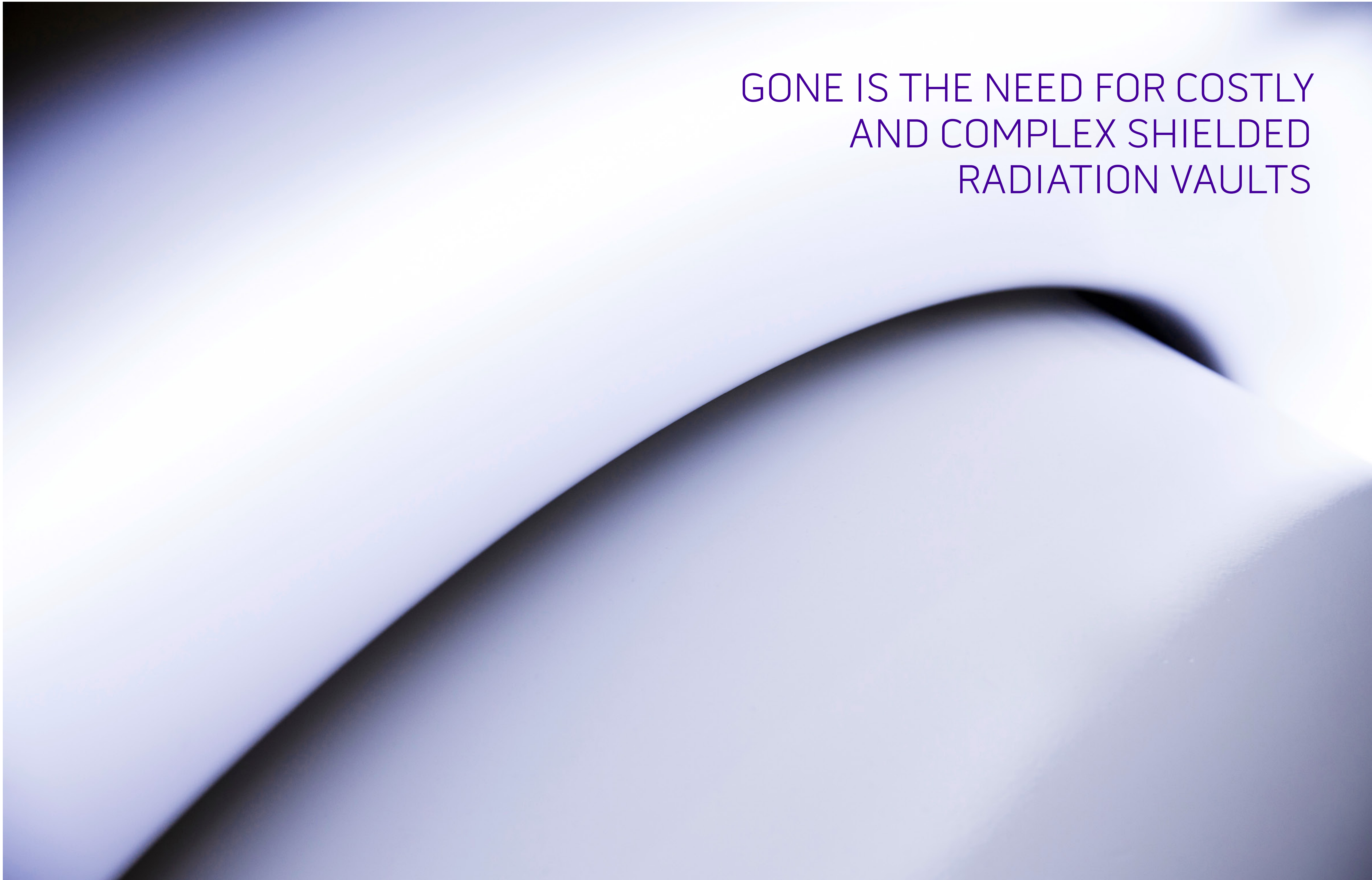
SELF-SHIELDED





Built upon a unique self-shielded design, ZAP-X eliminates the need for costly and complex shielded radiation vaults,[1] unlocking point-of-care delivery in locations previously inconceivable.

As a simple solution for departmental expansions, ZAP-X now also makes SRS delivery feasible via more cost-efficient satellite facilities, physician offices and ambulatory surgery centers.



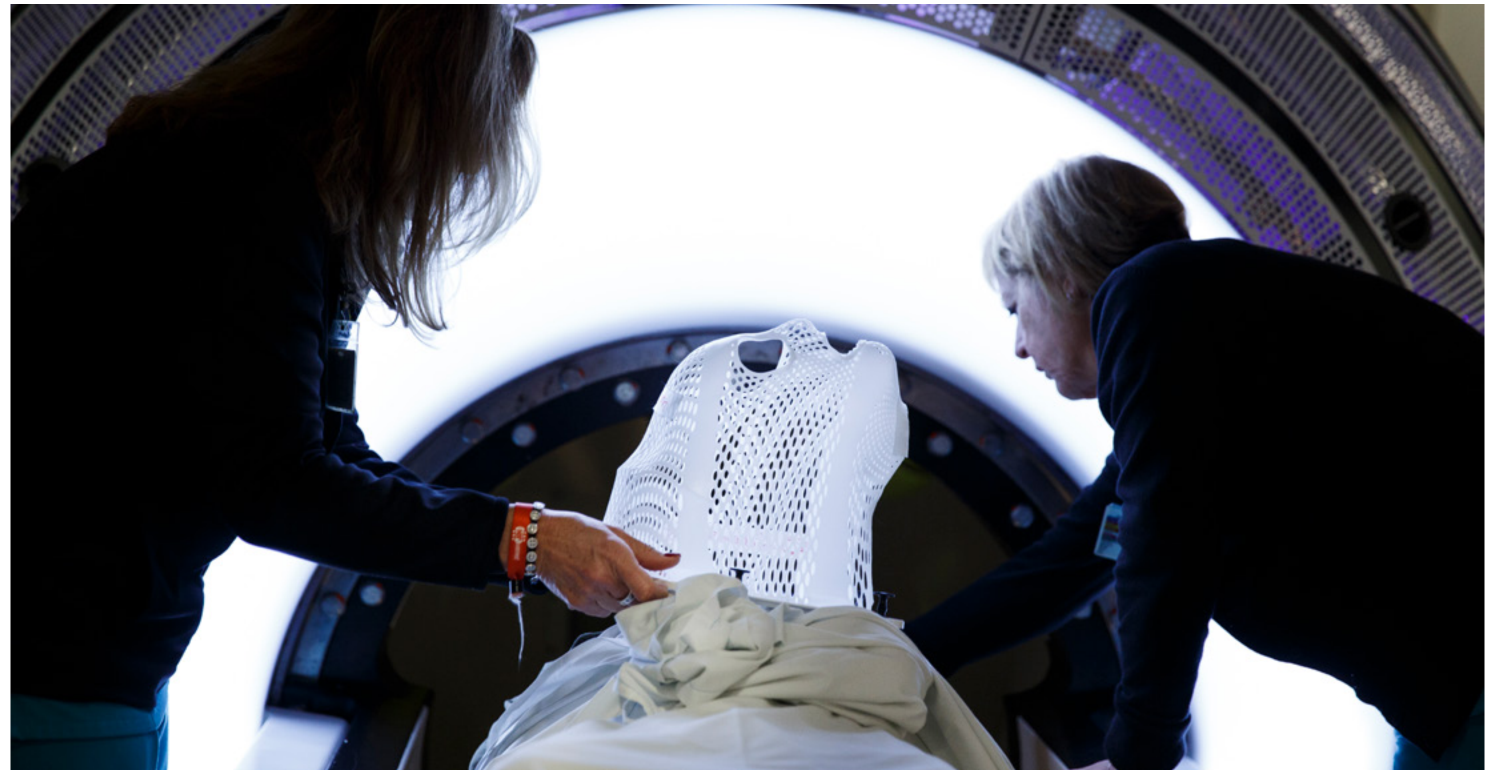
GONE IS THE NEED FOR COSTLY
AND COMPLEX SHIELDED
RADIATION VAULTS

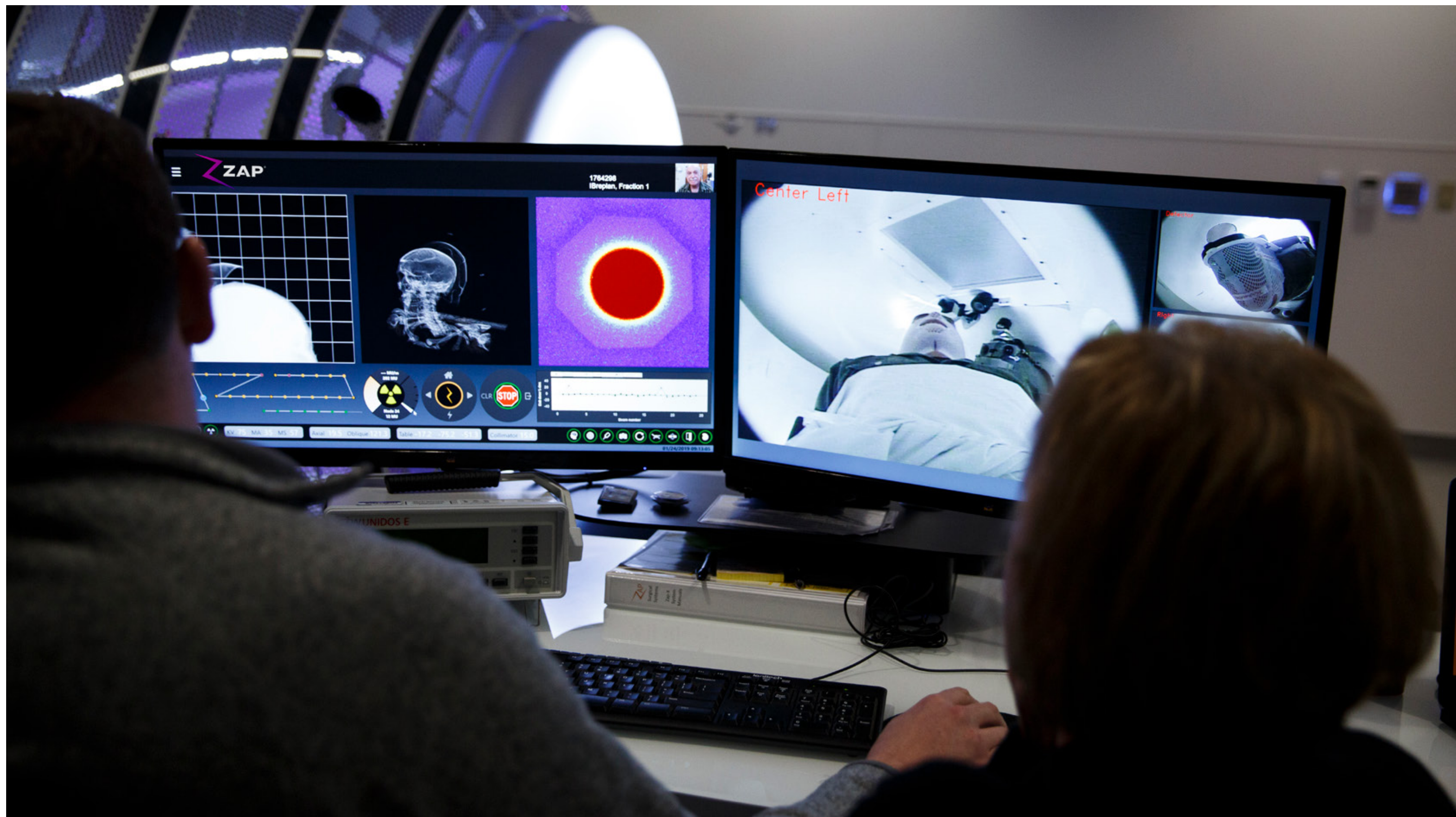
LINAC-BASED

The ZAP-X utilizes a modern linear accelerator to obviate historical use of Cobalt-60 and the related challenges of handling radioactive isotopes.

No more heightened security risks and related bureaucracy. And no more perpetual investment for replacement radioactive sources.

SAFETY INNOVATION





With the high-dose requirements of radiosurgery, error prevention and patient safety cannot be overstated.

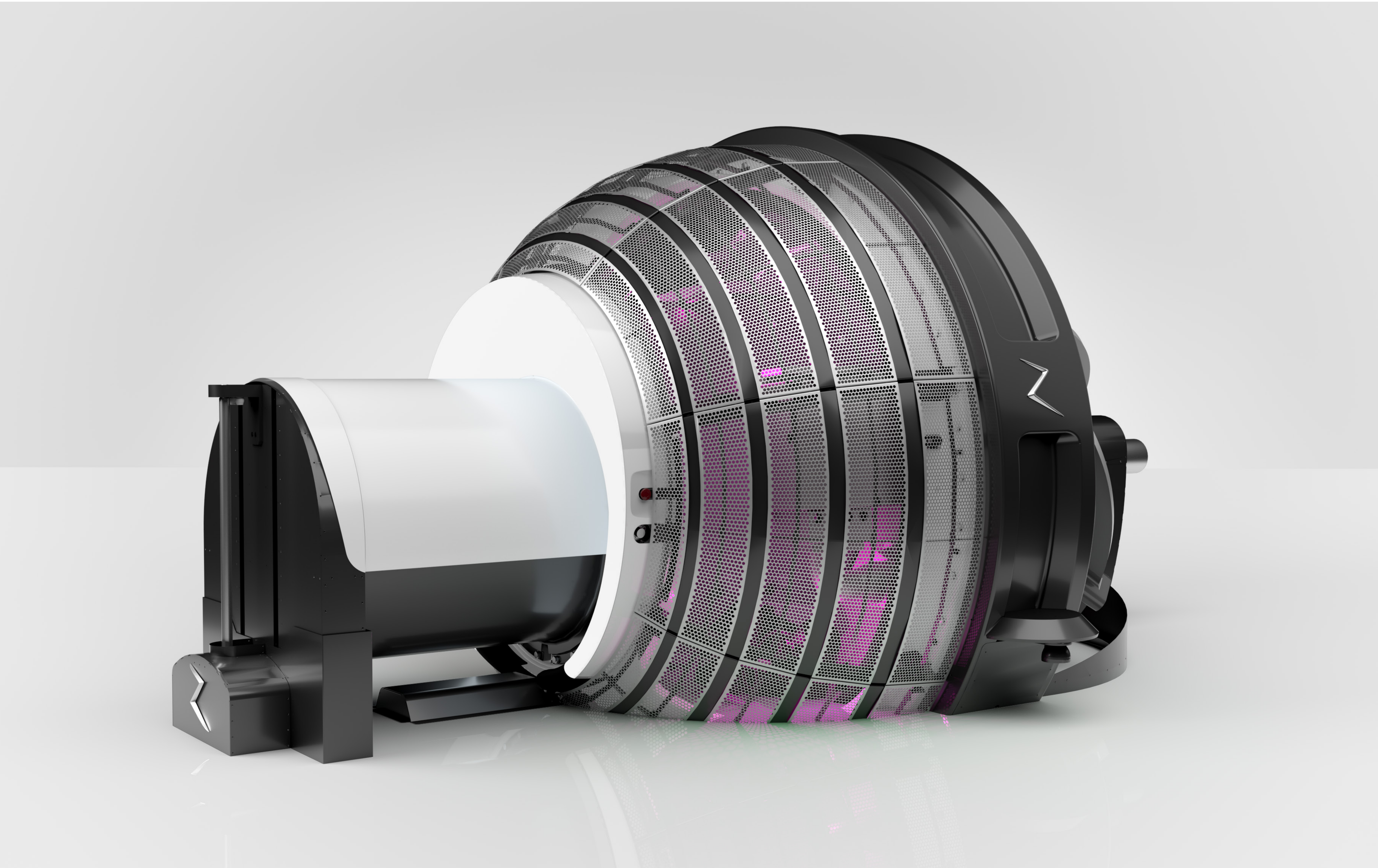
Mitigating the risks of potential human or mechanical error, ZAP-X deploys a unique, real-time exit dose validation system to instantly stop treatment and alert clinicians if treatment deviations occur.

Combined with a collimation system that lowers radiation leakage by nearly 50X as compared to multi-purpose radiation delivery systems,[2] ZAP-X offers clinicians and their patients the latest innovations in patient safety.

BETTER ECONOMICS

Removing the constraints of historical SRS delivery, ZAP-X expands market access by putting world-class radiosurgery in more communities, and within reach of more patients.

And by blending lower system, facility and operating costs with well-established reimbursement, ZAP-X provides a new standard in cost-effective care.



BUILT FOR RADIOSURGERY

ZAP-X is tailor-made to the unique requirements of radiosurgery, without the compromises necessary to accommodate myriad radiotherapy modalities or whole-body targets.

BUILT FOR THE BRAIN

WORLD-CLASS DOSIMETRY

All aspects of ZAP-X treatment delivery —beam energy, source-axis distance, and non-coplanar beam coverage— are engineered for the most advanced radiosurgery, and an exacting, steep dose gradient.

REAL-TIME IMAGE GUIDANCE

ZAP-X incorporates a high-definition kilovolt (kV) imaging system to provide intra-fraction image guidance and seamless re-alignment throughout each treatment.

FRAMELESS DELIVERY

Without the need for invasive stereotactic frames, ZAP-X maintains sub-millimetric accuracy while also enabling simple treatment fractionation.

STREAMLINED WORKFLOW

Using a simple and intuitive workflow, ZAP-X helps to ensure patient safety by eliminating the clutter and complexity of multi-purpose radiotherapy systems.

ZAP IS DEFINING WHAT'S **NEXT** IN RADIOSURGERY FOR THE BRAIN.

WON'T YOU JOIN US?

INQUIRIES:
info@zapsurgical.com

LEARN MORE:
ZapSurgical.com

ABOUT ZAP

At ZAP, we know a thing or two about what comes next. In everything, we are a team motivated by a single question: *Can a device address the limitations of the past to treat more people in more places?* We believe it can.

We believe that ZAP-X defines what's next in radiosurgery for the brain.

ZAP was founded in 2014 by Dr. John Adler, Professor of Neurosurgery and Radiation Oncology at Stanford University. Dr. Adler is also the inventor of the CyberKnife® Robotic Radiosurgery System and founder of Accuray, Inc. In 2018, Dr. Adler was awarded the American Association of Neurological Surgeons (AANS) Cushing Award for Technical Excellence and Innovation in Neurosurgery.

APPENDIX

Additional details regarding system principles and methods can be found via the following peer-reviewed publications:

Data indicated in the following publications may not reflect the current platform specifications.

1. Based on typical system use and patient volume. Weidlich G A., Schneider M, Adler J R. (December 06, 2017) **Self-Shielding Analysis of the Zap-X System.** Cureus 9(12): e1917. doi:10.7759/cureus.1917.
   View Publication Online

2. Weidlich G A., Schneider M, Adler J R. (February 02, 2018) **Characterization of a Novel Revolving Radiation Collimator**. Cureus 10(2): e2146. doi:10.7759/cureus. 2146
   View Publication Online

Zap Surgical Systems, Inc., 590 Taylor Way, San Carlos, CA 94070.
The ZAP-X® gyroscopic radiosurgery platform received FDA 510(k) clearance in SEP. 2017. It is currently not available in all markets. ZAP® and ZAP-X® are trademarks of Zap Medical System, Ltd. Document Control: MK-20111

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