

ARPA-H Awards Siemens Healthineers up to \$83 Million, Including a \$23 Million Cost Share, to Advance Photon Flash Radiotherapy for Cancer Care

- **U.S. Advanced Research Projects Agency for Health (ARPA-H) funds a five-year project to advance photon Flash therapy on traditional, widely accessible linear accelerators**
- **Experimental Flash* therapy shows potential for improved sparing of healthy tissue while effectively treating cancer**
- **Siemens Healthineers will invest \$23 million over the project time period**

The Siemens Healthineers business area Varian has been awarded up to \$60 million over five years by the U.S. Advanced Research Projects Agency for Health (ARPA-H) to accelerate development of photon Flash therapy, an ultra-high dose rate approach to radiotherapy with the potential to redefine cancer care. In addition to this award, one of the larger federal investments in medical technology innovation, Siemens Healthineers will invest \$23 million as a cost share over the project time period, for a total combined commitment to photon FLASH-RT development of up to \$83 million.

Flash photon therapy is an experimental treatment modality that delivers radiotherapy more than 100 times faster than today's technologies,¹ aiming to reduce side effects and make it possible to treat tumors where adverse reactions to surrounding healthy tissue is a limiting factor. Flash radiotherapy research has largely concentrated on proton and electron beam platforms; however, both face meaningful access to care scalability constraints.

As radiotherapy is required for more than 50% of cancer patients and photon beams remain the standard of care,^{2,3} improved access to photon Flash therapy has the potential to transform treatment globally. The company aims to create a scalable, cost-effective treatment option that fits within existing clinical workflows and infrastructure.

"This investment from ARPA-H strengthens our efforts to explore the potential of photon Flash therapy and to widen the possibilities for patients who may one day benefit from it," said Arthur Kaindl, head of Varian

at Siemens Healthineers. “By building on the extensive installed base of C-arm linear accelerators, we aim to speed potential adoption and enable broader access as this work progresses. Our hope is to help bring promising innovations within reach of more patients and more communities around the world.”

Sameer R. Keole, MD, chair of the American Society for Radiotherapy and Oncology (ASTRO) Board of Directors, added: “The radiation oncology community is at the forefront of cancer care, and this ARPA-H award – a milestone as the first for our field – recognizes our specialty’s unique ability to safely and effectively treat cancer. This support for advanced radiation therapy research will drive improved technologies, more efficient treatments, and new hope for people with cancer.”

Matthias Guckenberger, MD, president of the European Society for Radiotherapy and Oncology (ESTRO), emphasized that radiotherapy remains significantly underfunded in global cancer research. “ESTRO acknowledges that the U.S. Government (ARPA-H) has identified this missed opportunity and is contributing to closing this gap through a substantial research grant for novel radiotherapy methodologies,” he said. “This milestone highlights the transformative potential of investing in radiotherapy innovation to improve outcomes for patients worldwide.”

This award positions Siemens Healthineers to lead the transition of ultra-high dose rate radiotherapy from experimental promise to a global standard of care, advancing its mission to deliver more precise, efficient, and accessible cancer treatment worldwide.

*Flash therapy is under development and is not available for commercial sale.

¹ Zou W, Zhang R, Schüler E, Taylor PA, Mascia AE, Diffenderfer ES, Zhao T, Ayan AS, Sharma M, Yu SJ, Lu W, Bosch WR, Tsien C, Surucu M, Pollard-Larkin JM, Schuemann J, Moros EG, Bazalova-Carter M, Gladstone DJ, Li H, Simone CB 2nd, Petersson K, Kry SF, Maity A, Loo BW Jr, Dong L, Maxim PG, Xiao Y, Buchsbaum JC. Framework for Quality Assurance of Ultrahigh Dose Rate Clinical Trials Investigating FLASH Effects and Current Technology Gaps. *Int J Radiat Oncol Biol Phys*. 2023 Aug 1;116(5):1202-1217. doi: 10.1016/j.ijrobp.2023.04.018. Epub 2023 Apr 28. PMID: 37121362; PMCID: PMC10526970.

² M Abdel-Wahab, et al. *JCO Global Oncol*. 2021(7):827-842.

³ Waddle MR, Sio TT, Van Houten HK, Foote RL, Keole SR, Schild SE, Laack N, Daniels TB, Crown W, Shah ND, Miller RC. Photon and Proton Radiation Therapy Utilization in a Population of More Than 100 Million Commercially Insured Patients. *Int J Radiat Oncol Biol Phys*. 2017 Dec 1;99(5):1078-1082. doi: 10.1016/j.ijrobp.2017.07.042. Epub 2017 Aug 2. PMID: 28939229.

A press picture is available here:

<https://www.siemens-healthineers.com/press/releases/photon-flash-therapy>

Media contact

Bailey Allen

bailey.allen@siemens-healthineers.com

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