



FOR IMMEDIATE RELEASE

Hampton University Proton Cancer Institute Expands Treatment Options with Pencil Beam Scanning for Head and Neck Cancer Patients

November 13, 2024 – Hampton, VA – The Hampton University Proton Cancer Institute (Hampton Proton) is proud to announce the start of using Pencil Beam Scanning (PBS) technology in the treatment of head and neck cancer patients. While the center has successfully utilized PBS for prostate tumors, this marks its expansion into other diagnoses. This state-of-the-art technology enables highly precise and targeted delivery of proton therapy, improving patient outcomes while minimizing side effects.

PBS is a targeted form of proton therapy. This method delivers a more intricate and precise proton beam to target tumors in critical areas such as the head and neck. The process at Hampton Proton began with rigorous testing and calibration using phantoms, specifically the IROC (Imaging and Radiation Oncology Core) phantom from MD Anderson, which is a plastic composite shell mimicking the human body with a treatment insert and a base to assist in positioning, [according to the Texas-based cancer center.](#)



The RQA Lab Head & Neck Phantom at MD Anderson



Before officially launching PBS treatment for patients on October 21, the team at Hampton Proton conducted thorough tests using the phantom and dry-run plans on previously treated head and neck patients, said Biniam Tesfamicael, Hampton Proton's lead medical physicist. These tests allowed the team to compare uniform scanning and double scattering plans with PBS plans, confirming the latter provides additional precision needed to avoid critical structures in head and neck cases.

"Our goal is to finalize head and neck by the end of the year, and make sure that we pass all points and then move to other disease sites," said Tesfamicael. "Right now, we are planning head and neck, and [then we will prepare to treat] brain and spine patients. Then, eventually, we will be planning for breast and chest wall diagnoses and treatment."

While uniform scanning and double scattering delivery methods already promote minimal side effects and a stable quality of life for patients, expanding treatment options using PBS is a goal for Hampton Proton. According to Tesfamicael, PBS treatments are more cost-effective for the center as it eliminates the need for apertures and compensators, which are customized for each patient. Hampton Proton just began treating its first head and neck cancer patient using PBS. The patient was referred after initially receiving x-ray therapy at another facility, with the recommendation that proton therapy, specifically PBS, would offer better results. After collaboration between Hampton Proton's medical team and the referring physician, the decision was made to proceed with PBS. Hampton Proton's expanded use of PBS technology is part of the institute's ongoing mission to offer the most advanced, effective treatments to cancer patients. In October 2023, the center [announced the successful completion of a two-year recommissioning of Room 4](#), which continues



to treat prostate patients using PBS. The upgrade transformed the room from uniform scanning to pencil beam proton therapy, establishing the center as one of the few in the country to offer this alongside uniform scanning and double scattering, which remain effective options for a range of diagnoses, providing reliable and powerful forms of treatment tailored to meet each patient's unique needs.

The choice of treatment form is always at the discretion of the physician, who selects the best approach based on each patient's unique case and health considerations.

For more information on Pencil Beam Scanning and proton therapy services at Hampton Proton, please visit www.hamptonproton.org or contact 757.251.6800.

Media Contact:

Lourdes Hernandez

Marketing Specialist II

Hampton University Proton Cancer Institute

Lourdes.Hernandez@hamptonproton.org

ABOUT HAMPTON UNIVERSITY PROTON CANCER INSTITUTE

The Hampton University Proton Cancer Institute, Cancer and Research Center (Hampton Proton) is a leading cancer treatment and research facility dedicated to advancing the fight against cancer. As pioneers in proton therapy and cutting-edge research, Hampton Proton provides compassionate care and precise treatments to patients while driving scientific discovery in the field of oncology. Headquartered in Hampton, Va., Hampton Proton, the eighth such center established in the country, is the only proton center owned and operated by a historically Black college and university (HBCU) and is committed to excellence in patient care guided by innovative research, advocacy, access to care and better outcomes. The institute treats several different types of cancer, including breast, prostate, pediatric, lung, head & neck, ocular, brain & spine and gastrointestinal.

For more information, visit hamptonproton.org.