

**Presentation of Special Needs Petition for PET/CT,
Carteret County,**

Proposed 2024 State Medical Facilities Plan

July 20, 2023

Presented by: Kyle Rusthoven, MD

Introduction

Good afternoon, my name is Dr. Kyle Rusthoven. I am a radiation oncologist certified by the American Board of Radiology. I have been the Medical Director of Radiation Oncology at Carteret Health since 2015 and am now one of two full-time radiation oncologists at our hospital.

Comprehensive Cancer Care at Carteret Health

Cancer care is a major priority at Carteret Health. By 2025, we expect 634 new cancer cases for the County alone; and we treat about 96 percent of those new cases. I have been here for 8 years. During my tenure, annual Radiation Oncology consultations have increased by 25 percent. These numbers exclude existing cancer patients who are being maintained with retreatment. They currently represent about 25 percent of our patient volume, a figure which will increase because systemic therapy has become more effective in prolonging the survival of patients with advanced or metastatic cancer.

In addition to clinical growth, Carteret Healthcare has achieved meaningful quality recognition. Since 2013, our cancer program, which I chair, has been accredited by the American College of Surgeons Committee on Cancer. In 2019 we achieved accreditation with Silver commendation. Undergirding these successes, our cancer program is fortunate to have strong backing from administration and our Board.

Importance of Full-Time PET at Carteret Health

An important part of developing a cancer treatment plan is a PET scan. Carteret Health has very restricted PET/CT service on a mobile unit. It comes only on Sunday, we are limited to 12 scans a week, and only one radioisotope, FDG. Newer radioisotopes specific for brain, breast and, in particular,

prostate scans, are not available. Yet, together, these three cancer types represent about half of new cancer patients.

The restrictions on schedule and radiotracers means that approximately half of our patients are sent out of the county for their PET/CT imaging. Our Cancer Program Needs Assessment has repeatedly identified transportation to be one of the most significant barriers to care for patients in Carteret County, which is further exacerbated when the necessary diagnostic PET/CT imaging is unavailable in near where they live. This often leads to delays in care, particularly for patients with a disability or those facing financial hardship.

The proposed solution, a shared PET/CT simulator would be ideal. Our existing CT simulator is at capacity many days a month, requiring us to reschedule patients for a later date. Between 2015 and 2022, the number of radiation therapy plans per year more than doubled, from 243 to 514. Each regular CT simulation takes an average of an hour. Simulations performed with 4D technique, with IV contrast, or when multiple sites are being treated, take 90 minutes. To keep costs down, we also use our existing CT simulator as a back-up diagnostic CT for radiology or acute presentations in the emergency room. These factors have led to increasing demand for our CT simulator time, which risks an operational bottleneck in radiation planning.

In addition to population growth, the increase in radiation plans is related to the expanding use of stereotactic radiation for patients with oligometastatic disease and to the increasing use of dynamic and adaptive radiation planning. Patients may be re-simulated during treatment for a variety of reasons, including weight loss, tumor response, or changes to their internal anatomy around the treatment target. Re-planning, in these settings, improves treatment accuracy and safety and optimizes the therapeutic ratio of radiation therapy. Depending on the disease site, patients will undergo 1 to 3 simulations during a course of treatment. As image guidance and treatment monitoring technology in Radiation Oncology continue to improve, the mean number of simulations performed during treatment is also likely to increase.

Simulator capacity is only one of the reasons for this request. A PET/CT simulator has features for radiation therapy planning that are not available on a standard oncology CT simulator. PET images, obtained in treatment position at the time of simulation, increase sensitivity, specificity, and accuracy of radiation target delineation for patients with cancers of the head and neck, lung, cervix, anus, esophagus, prostate, and lymphoma. While it is not perfect for all patients, due to the narrower CT bore size and reduced size range for metallic artifact attenuation compared to a standard simulator, the fused PET/CT simulator would be the ideal treatment planning platform for a significant portion of our patients, particularly those receiving definitive-intent therapy.

A PET/CT simulator is more expensive than a standard CT simulator, but, as Kyle Marek explained, we can justify the additional cost if we can make dual use of the same equipment to do fixed PET scans. We could schedule patients for weekday PET scans and could use specialized brain, breast, and prostate isotopes. In doing so, we would reduce delays in care and retain the 50% of patients who are currently leaving the county for their diagnostic PET/CT imaging. We estimate that full time PET capacity would mean in the range of 450-500 additional annual PET/CT scans performed in Carteret County.

Having studied our cancer numbers, we know that, despite how busy our cancer program at Carteret Health Cancer Center is, we would not likely reach the Performance standard for a fixed PET scanner – 2,080 annual scans by the third year of operation. We feel confident, however, that we would do over 1,000 diagnostic PET scans per year, nearly doubling the number of scans which are currently performed on our mobile unit. With a dual PET/CT scanner/simulator, the scanner would pay for itself with the combination of PET scans and additional radiation therapy simulations. Even with this dual use, however, the sum of simulations and diagnostic scans is not likely to reach 2,080. As such, the second part of our special need petition is to reduce the performance standard by half, from 2,080 to 1,040 combined scans and simulations. This would be efficient. It would truly serve as the ideal dual-purpose unit to address multiple oncology service line needs at our community hospital. Without question, a shared scanner/simulator would help optimize the coordination of care amongst the treating physicians and reduce unnecessary travel and treatment delays for our patients.

I believe this shared function PET/CT scanner would be a first for North Carolina. This technology has evolved at the perfect time for Carteret Health Care. With a need in the 2024 Plan, we could apply for a CON and conceivably have a decision in time to include it in our current major Cancer Center improvements.

We appreciate your thoughtful consideration of this important request.

I am happy to answer any questions.