Canon



Dana's Story

Addressing Patient Comfort Challenges in PET/CT Imaging

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Dana and her husband are the owners of a bar and grill in the historic downtown of Cookeville, TN located on the picturesque Cumberland Plateau. One day in 2022, Dana detected a lump on her clavicle and an anomaly on her scalp. Despite seeking medical attention on multiple occasions, she was consistently dismissed by healthcare professionals. After seeking a second opinion as her symptoms worsened, her new doctor promptly ordered additional tests and a biopsy, which confirmed the presence of cancer.

Dana was diagnosed with Non-Hodgkin's Lymphoma and underwent chemotherapy, a treatment that is very effective for this type of cancer. However, a recent PET scan indicated a resurgence of the cancer, coinciding with a bout of pneumonia. Recognizing the potential for misdiagnosis due to the presence of infection, Dana's physician recommended another PET scan to confirm the findings, highlighting the ongoing complexity of her medical journey.

While the need for an additional PET scan was tantamount to the successful treatment for Dana's cancer, she suffers from claustrophobia, and prior experiences on imaging equipment including a recent breakdown with an MR examination, meant that the anxiety and fear of yet another uncomfortable experience was something she would have to prepare for.

Patient Comfort Challenges with PET/CT Imaging



Dana's apprehensions regarding PET/CT scans are shared by many cancer patients who undergo imaging procedures. These concerns not only impact the patient experience but pose significant challenges in acquiring and interpreting the patient images physicians need to make informed treatment decisions.

Patients like Dana who experience discomfort during scans, particularly due to fears such as claustrophobia, may struggle to tolerate their imaging procedures. Past studies have documented this experience in PET/CT suggesting as many as 1 out of every 5 patients are affected.[1]

1 out of 5

patients experience discomfort or anxiety

Furthermore, the same studies have documented the impact that fearful or uncomfortable patients can have on their examination, this can include refusal to be scanned or incomplete scans. For patients who have anxiety and complete their scan, it is estimated that up to 71% have artifacts due to movement.[2]

While claustrophobia may be the most reported challenge with patient comfort, PET/CT imaging procedures do have additional factors that impact the patient experience. Patients who are frail, sick, or in pain, may find it difficult to endure the traditionally long scan times associated with PET exams. Other factors such as limited engagement with hospital staff, or scanner beds that are not wide enough can further exacerbate the difficulties for patients to complete such an essential imaging procedure.

Canon Medical's Cartesion Prime PET/CT is Designed to Improve Patients' Experience

Canon Medical approaches every piece of equipment, including PET/CT, with the patient's experience in mind including how to address challenges that may create a barrier to completing their exam.

In Dana's case, design elements such as a large open bore with a flared gantry design and a short tunnel can minimize the anxiety often associated with claustrophobia. With lower bed heights for easy access on and off the table, a wide and comfortable table, and fast scans, Canon's Cartesion Prime Digital PET/CT addresses many of these patient comfort challenges.

> "The Canon Cartesion Prime has made the entire PET imaging experience more pleasant for our patients. This larger bore makes it easier to go in. It reduces their claustrophobic feeling."[3]

The Cartesion Prime Digital PET/CT boasts a digital detector, large standard 27cm scan field of view, and the ability to customize exams with variable bed speeds that all come together to create incredibly fast scan times as low as 3 minutes where clinically indicated.

For Cookeville Regional Medical Center, where Dana has been referred for her PET/CT, the recent installation of the Cartesion Prime Digital PET/CT has been transformative, particularly for patients like Dana. Prior to the installation, the Medical Center encountered an average of 2 patient refusals per week for this essential diagnostic scan. However, since the implementation of the Prime scanner, there have been no reported refusals.[4]

Patient Refusals Can Lead to Revenue Loss

Prior to installing the Cartesion Prime PET/CT at Cookeville Regional Medical Center, where Dana receives her care, the department was experiencing on average 2 patient walk aways per week due to claustrophobia concerns.

$159,952

Yearly cost of exam not being completed[5]

$12,000 to $50,000

Range of potential yearly cost of FDG, based on local market conditions[6]

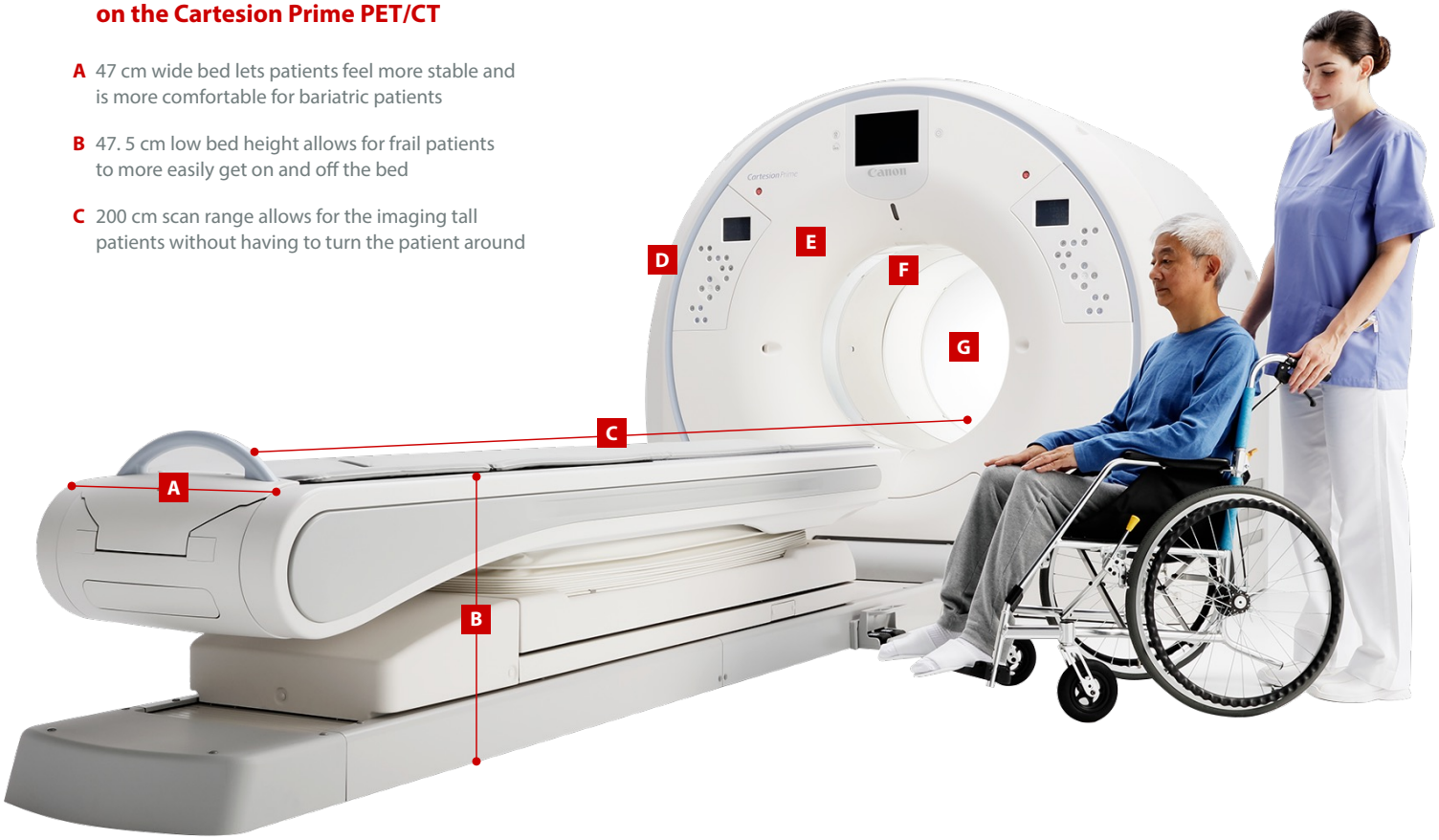
Fluorodeoxyglucose (FDG) is a prescribed injectable radioactive tracer used in diagnostic oncology PET/CT imaging. FDG costs can vary significantly based on market conditions. It is recommended to check with your local FDG supplier to understand cost impact to you.

Patient Focused Design Enhancements on the Cartesion Prime PET/CT

A 47 cm wide bed lets patients feel more stable and is more comfortable for bariatric patients

B 47. 5 cm low bed height allows for frail patients to more easily get on and off the bed

C 200 cm scan range allows for the imaging tall patients without having to turn the patient around



D



Position the patient 4.2 cm to the right or left from the gantry or control room. Allows operator to iso-center the area of interest. No more dragging patient by the sheet.

E



Controls repeated on back of gantry promotes a better patient and tech experience.

Flared Gantry on the front and back helps alleviate claustrophobia.

F



Canon's standard 27 cm Axial Field of View (aFOV) increases the coverage of each bed position compared to smaller aFOVs. This means faster scans for a better patient experience.

G



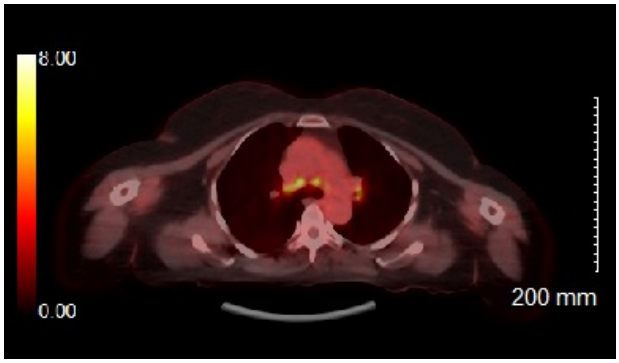
Large 78 cm open bore helps with claustrophobia.

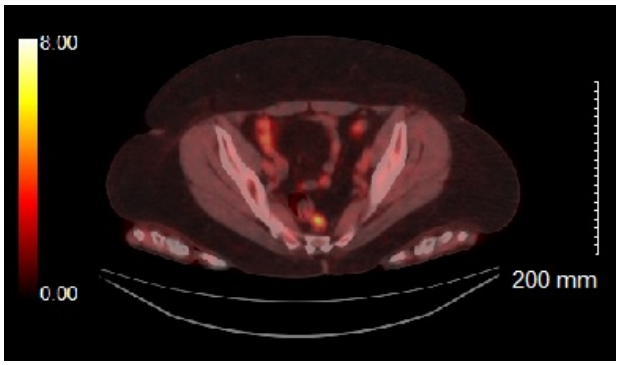
Dana's PET/CT Scan on the Cartesion Prime



Dana received her first scan on the Cartesion Prime and not only was it a better experience for Dana, but the enhanced image quality from their new Cartesion Prime Digital PET/CT helped her treatment team make the best decision for Dana. Despite initial apprehension, Dana found the scanning process surprisingly easy and even remarked on her relaxed state throughout the procedure, a significant departure from her usual claustrophobic tendencies.

Dana's PET/CT Scan Results





Due to the large bore, Dana was able to complete her PET/CT imaging on the Cartesion Prime.

The exam revealed that her cancer, Non-Hodgkin's Lymphoma, had re-occurred.

Dana and her oncologist decided on a treatment path of watchful waiting, to give her time to regain strength after pneumonia, before she receives chemotherapy.

"My experience (in the PET/CT scanner) was very easy if that's a good word for it. I was not claustrophobic at all! I was very relaxed the whole time. When I heard the machine go off, I was shocked that it was over."

Treatment Continues for Dana

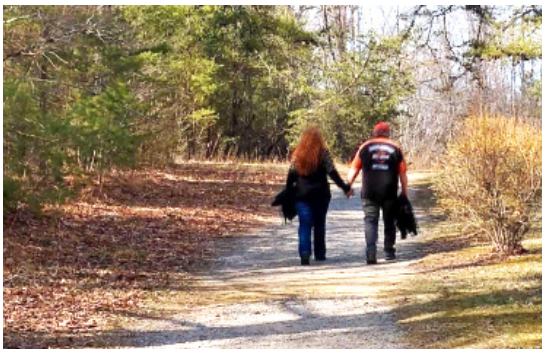
While Dana is continuing her cancer battle, she is grateful for the experience she has had with the Cartesion Prime Digital PET/CT at Cookeville Regional Medical Center.

> "I am super blessed to be a patient of oncology at Cookeville Regional Medical Center. I have never considered going anywhere else and to know that they have the PET scanner and that technology here is fabulous."















Dana may still have a long road ahead of her but being able to take the anxiety out of aspects of her care, like imaging procedures, lets her focus on the things she loves like her family and friends.

References

1. Acuff, Shelley et al. *Reduction of Patient Anxiety in PET/CT Imaging by Improving Communication Between Patient and Technologist*. J Nucl Med Technology, no 42:(2014): 211-217.
2. Thatcher, Jared, Osman, Medhat. *Prevalence, Challenges and Solutions for F-18 FDG PET/ CT Imaging of Claustrophobic Patients*. Journal of Nuclear Medicine Vol. 47, Issue 1 (2006): 47.
3. The clinical results, performance and views described are the experiences of the clinicians. Results may vary due to clinical setting, patient presentation and other factors.
4. Statement known to be true up to and at time of publication
5. Based on 2024 Medicare national payment rate for PET/CT
6. Data on file

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