

**UMass MRI and Imaging Center, LLC**  
**UMMIC-22062409-RE**

**APPLICANT QUESTIONS #2**

*Responses should be sent to DoN staff at [DPH.DON@State.MA.US](mailto:DPH.DON@State.MA.US)*

While you may submit each answer as available, please

- List question number and question for each answer you provide
- Submit responses as a separate word document, using the above application title and number as a running header and page numbers in the footer
- When providing the answer to the final question, submit all questions and answers in one final document
- Submit responses in WORD or EXCEL; only use PDF's if absolutely necessary. If "cutting and pasting" charts, provide them in a PDF so they can be clearly seen
- **Whenever possible, include a table with the response**

**FACTOR 1**

1. The DoN application and Responses to DoN Questions #1 mention several sources of information that were used to support Patient Panel Need for PET-CT services on the Marlborough Hospital Campus.
  - Responses to DoN Questions #1 states that 88 patients received PET-CT services in Worcester in the last calendar year and nine patients received PET-CT services in Fitchburg in the last calendar year (pg.2).
  - The application provided the number of patients treated for cardiac and oncologic conditions over the past three fiscal years (pg.9).
  - The Application states that the Advisory Board projects that demand for PET-CT within the PSA will grow by 8.9% over the next five years and 15.7% over the next 10 years (pg.10).
  - The application states anticipated PET-CT volume in Year 1 is 165 scans (pg.9) with projected yearly increases of 12% in Year 2 to 5% in Year 6 (pg.9). The application notes that the projections were derived using the Shields PET standard year over year growth trend from new PET starts with Shields since 2016 (footnote 32).

To better understand Patient Panel need for PET-CT services on the Marlborough Hospital Campus, and anticipated PET-CT volume, explain with data, how you projected PET-CT volume to be 165 scans for Year 1, with up to 12% yearly increases, given that 97 patients sought PET-CT services in Fitchburg and Worcester in the last calendar year.

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**Applicant's Response:**

The Applicant's analysis of the Shields business model growth trend lead to the use of the standardized year over year growth projections for a new PET-CT market. The recitals in the submission narrative and the responses to the Department's first round of follow-up questions are derived from these same Shields' data assumptions, which date back to 2016. The Applicant appropriately applies this standardized trend to the Proposed Project.

The Applicant relies on assumptions derived from referral volume from the top ten primary zip codes for Marlborough Hospital, multiplied by the market share per zip code as provided by AHD.com (the American Hospital Directory) for purposes of Factor 1 analysis. The Applicant relies on this data as opposed to direct referral data because there is no current PET-CT line of business at Marlborough Hospital. Said differently, the 97 patients<sup>1</sup> who received PET-CT scans does not represent the entire swath of eligible patients who sought a PET-CT scan, but rather a subset of a larger number.

The Applicant presumes that the primary reason that only 97 patients were captured in the analysis is that the significant role of Marlborough's prospective referring providers *was not* part of the data capture, the reason being that the information is not available (as is mentioned above). In absence of access to local PET-CT technology, care decisions are made to leave the market<sup>2</sup> or use available,<sup>3</sup> less-sensitive technologies such as single-photon emission computerized tomography (SPECT) scans.<sup>4 5</sup>

Furthermore, clinical investigation has revealed that systematically applied PET scanning has a significant impact on patient management.<sup>6</sup> The primary aim of the proposed project is for Marlborough Hospital to provide local patient access to PET-CT imaging via Shields operational acumen. More effective patient engagement is a value-add for patients which, in turn, increases the volume of the local PET-CT market.

The confluence of the above referenced explanations drives the projected volume recited throughout the submission.

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<sup>1</sup> The Applicant identified another 63 patients who received PET-CT imaging scans at the Shields MRI at Framingham location in FY2022. Please note that the "MRI" in the name of the facility is not indicative of the type of service that was provided – these 63 scans were PET-CT scans.

<sup>2</sup> The 63 patients who left the network to receive imaging at the Framingham site illustrates this trend.

<sup>3</sup> Marlborough Hospital available nuclear scans: <https://www.ummhealth.org/marlborough-hospital/services-treatments/radiology-and-imaging/services-we-provide/nuclear-medicine>

<sup>4</sup> PET scans provide more detailed imaging than SPECT scans. Information available online at: <https://www.mobilecardiacpet.com/blog/whats-the-difference-between-pet-and-spect-scans/>

<sup>5</sup> The main difference between SPECT and PET scans is the type of radiotracers used. While SPECT scans measure gamma rays, the decay of the radiotracers used with PET scans produce small particles called positrons. Information available online at: <https://www.nibib.nih.gov/science-education/science-topics/nuclear-medicine>

<sup>6</sup> Sachs Sharona, MD and Bilfinger Thomas V, MD, ScD, FCCP. The Impact of Positron Emission Tomography on Clinical Decision Making in a University-Based Multidisciplinary Lung Cancer Practice. CLINICAL INVESTIGATIONS| VOLUME 128, ISSUE 2, P698-703, AUGUST 01, 2005. Available online at: [https://journal.chestnet.org/article/S0012-3692\(15\)50414-5/fulltext](https://journal.chestnet.org/article/S0012-3692(15)50414-5/fulltext)