

**Oregon Health Authority**

**Capitol Project Reporting Form (CPR-1)**

Reporting Entity Identification and Contact

**Facility**

**Name**:Providence Portland Medical Center

**Federal Tax ID#:** 93-0386906

**Address**:4805 NE Glisan Street

**City:** Portland **State:** OR **Zip Code:** 97213

**Individual completing form**

**Name**: Eric Olson

**Title**: CFO – Providence Portland Medical Center

**Email**: eric.olson@providence.org

**Phone**: 503 215-6241

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*If address is different than facility listed above, please provide:*

**Address**:

**City:**       **State:**       **Zip Code:**

Capital Project Qualitative Information

**1. Provide a brief description of the project.**

Replacement of an Elekta Synergy Linear accelerator with Viewray MRIdian linear accelerator

**2. Proposed start date: Jan 2019**

**3. Date of approval by board:** June 26, 2018

**4. Expected completion date: August 2019**

**5. What is the expected project cost? $**8,650,000

**6. Describe the expected benefits to the community that your facility serves. Include both direct financial benefits such as charity care as well as qualitative benefits such as access to care and quality improvements. Attach additional pages if needed.**

* This project entails the acquisition and installation of MRi linear accelerator, a new technology with the following capabilities and potential:
  + The soft-tissue contrast of MRi linear accelerator on-board MRI enables clinicians to locate, target and track the tumor and healthy tissues and accurately align a patient to the treatment beams without the use of X-ray, CT or surrogate registration markers. If the clinician prefers, the software has the ability to automatically map the patient’s soft tissue anatomy at each treatment session in less than one minute, and MRi linear accelerator can use that information to automatically align the patient.
  + Due to changing anatomy the clinician may be unable to obtain an optimal match between the patient on the table and the treatment plan. Using an MR image captured at the beginning of each therapy session MRi linear accelerator automatically maps each patient’s soft tissue anatomy in 3D which can be used for real-time treatment guidance and for recording anatomical changes for dose reconstruction and dose accumulation, thus providing unique positioning and dose certainty in the treatment process. MRi linear accelerator can capture multiple soft-tissue imaging planes concurrently during treatment, refreshing the image multiple times per second. This real-time imaging enables the physician to track the movement of the tumor and the surrounding healthy tissue directly, rather than relying on registration markers such as existing bones or implanted fiducials. If a tumor or critical organ moves beyond a physician defined boundary, the treatment beam can automatically pause. This beam control becomes especially important in the situations where a tumor may be in close proximity to a critical organ, such as the heart during lung and breast cancer treatments or the rectum during prostate cancer treatments. This knowledge of the tumor location has enabled physicians to treat patients who would not previously have been considered radiation therapy candidates.
  + MRi linear accelerator can be used for 3D-CRT, IMRT, IGRT, SBRT and SRS and can also be used to treat a broad spectrum of disease sites. In addition, we believe MRi linear accelerator increased target accuracy will allow physicians to treat patients with higher doses over fewer treatment fractions and potentially improve patient throughput and efficiency. MRi linear accelerator fits inside most standard radiation therapy vaults with modifications and is supported by existing codes that are available for linear accelerator treatments.
  + Since the MRI images are superior to CT for delineating soft tissues, the potential of the applications in the clinic are very promising, taking the current status of excellence in radiation therapy to the next level. Not only will MRI imaging improve the image-guided targeting of radiation, it will also enable us to do functional studies such as seeing how a tumor’s oxygenation levels predict for radiation sensitivity, and possibly tracking lymphocytes invading the tumor after radiation and immunotherapy. Nanoparticle technology will also enable us to better delineate potential lymph node spread of tumors, thereby aiding the dose distribution designed by the physicians. Already, plans are in the process of utilizing imaging as part of our in-house EACRI protocol. Existing immunotherapy protocols utilize dynamic-contrast enhanced and diffusion weighted MRI sequences, known as intravoxel incoherent motion (IVIM), to evaluate microvasculature and interstitial pressure in the tumor microenvironment as a potential non-invasive biomarker for immune infiltrate. Additionally, recent studies have demonstrated iron nanoparticles not only enhance tumor associated macrophages, but may polarize them to an anti-tumor phenotype, providing both an imaging and therapeutic contrast reagent that can be readily combined with immune-modulating doses of radiation . The MRi linear accelerator would provide novel imaging based biomarkers and hypothesis generating data. Together with our expertise in combination immunotherapy and radiation, this next level biomarker evaluation would solidify our place amongst elite radiation and research facilities.

**7. In what ways may this project negatively impact the community that your facility serves? Include direct cost such as bonds as well as indirect impacts such as service interruptions. Attach additional pages if needed.**

**None**

**8. How has your facility evaluated the need for this project within the community that you serve?**

The technology was vetted through a Providence St Joseph system approach. Radiation oncologists, radiation oncology administrators and radiation physicists throughout PSJ evaluated the MRi Linear accelerator technology and determined it to be a significant advancement in radiation cancer treatments. Additionally, because of the strong immunotherapy research program at Providence Portland (Franz Cancer Institute) our system radiation focus group recognized this facility as the most appropriate site to initiate MRi linear accelerator technology.

**9. Are the medical services created by this project already available in the community that your facility serves?**

MRi linear accelerator technology is not available in Oregon.

Public Notice and Comment

**1. Provide a link to the webpage where public notice of the capital project was posted. If your facility does not maintain a webpage provide the name of the newspaper where the public notice was made and date of publication. Attach additional pages if needed.**

<http://oregon.providence.org/our-services/c/capital-project-reporting/>



**2.** Describe your facility’s method of collecting and reviewing public comments on the capital project. Attach additional pages if needed.

Interested parties can submit comments to the email address, <mailto:orpopcapitalprojectcomments@providence.org>, listed in the above webpage. The mailbox is managed by PHS’s Oregon Region Financial Planning team. Any concerns will be passed along to the stakeholder of the project to address.

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| --- | --- |
| **\*Signature:** | Eric Olson |
| **Date:** | June 27, 2018 |

*\*Entry of name connotes signature*

**Please email the completed form to:** [OHA.HealthAnalyticsDataSubs@state.or.us](mailto:OHA.HealthAnalyticsDataSubs@state.or.us)

Health System Research and Data

Health Analytics

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