

US Proton Therapy Market Opportunity Analysis

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Abstracts

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Proton beam therapy is seen as the next great leap forward in treating cancer with radiation. It has been found that proton therapy is beneficial for tumors surrounded by sensitive structures such as the eye, brain, and spinal cord, where the organs are sensitive and there is high potential for radiation damage. Proton therapy is also very useful in childhood cancer treatment due to the high risk of long-term side effects in children during standard radiation treatment. The major advantage is that there is minimal or no side effects compared to conventional forms of radiation which makes this therapy much more easily tolerated than standard radiation therapy.

Proton therapy is applied to a specific area of the patient's body which means that this therapy can be used to shrink tumors that have not spread to other parts of the body. Tumors adjoining sensitive and critically important tissues such as the optic nerves that travel between the eye and brain need protection from radiation damage and such cases are best treated with proton therapy. Doctors now use proton therapy exclusively or in conjunction with standard radiation therapy, surgery, and/or chemotherapy. In children that are infected with cancer, proton therapy is particularly useful for treatment because it reduces the chance of harming healthy, developing tissue. Proton therapy can also be used in children for rare cancers of the central nervous system (brain and spinal cord) and the eye, such as retinoblastoma and orbital rhabdomyosarcoma.

In US, there are 14 proton therapy centers catering to a potential patient base of more than 350,000 cancer patients with respect to treatment with proton therapy. This number is expected to cross 24 by 2020. This number of centers, though not sizable, still points to a huge multi Billion dollar potential market for the companies, though there would still be a majority of cancer patients who can likely benefit with proton therapy, but who may have fallen off the map.

The market for proton therapy centers and the demand for these facilities are growing driven by the number of cancer diagnoses. Of this prostate cancer that has about 186,320 patient additions a year has seen a favorable impression of the therapy. There are also other positive aspects in this scenario such as that of the Loma Linda facility which has been using protons to treat men with prostate cancer since 1991 and found that major rectal and urinary side effects occur among less than 1% of its patients. The absence of such risks associated with other radiation treatments or surgery is a major driving factor driving the demand for proton therapy among patients.

In the US the way forward for proton therapy is expected to be in establishing a nationwide network of proton facilities, given that so many cancer patients lack access to the technology. In doing this the role of the corporate and private medical sector would be equal or more than the academic proton centers which their own issues to grapple with. Another area of development that will promote growth in this sector is that of proton beam technology itself which is rapidly advancing. We can expect to see American centers upgrading to intensity modulated proton beam therapy that will make it more accurate.

“US Proton Therapy Market Opportunity Analysis” Report Highlight:

US Proton Therapy Market Overview

Targeted Patient Base & Economic Capacity Analysis

Proton Therapy Cost Analysis

Proton Therapy Reimbursement Policy

Proton Therapy Center Infrastructure Analysis

US Proton Therapy Market Dynamics

Insight on Operating & Upcoming Proton Therapy Centers

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About

As a treatment methodology proton therapy is still in its infancy. In recent years there has been heightened interest in the therapy and a consequent spurt in demand of proton therapy for the treatment of cancer. This has seen the stage growing rapidly and indicating higher potential for growth in the medium to long term.

In the US, there were about xx centers, as of 2012, catering to a potential patient base of around 300,000 cancer patients with respect to treatment with proton therapy. This number is expected to cross xx by 2017. This number, though not sizable, still points to a huge multi Billion dollar potential market for the market players, though there would still be a majority of cancer patients who can likely benefit with proton therapy, but who may have fallen off the map.

The market opportunity emerges from a situation that has seen an alarmingly high number of cancer incidences but limited treatment options which have forced physicians to look for treatments beyond the conventional ones. In such a scenario, proton therapy emerges as the most advanced radiation technique available, with its own set of benefits.

From about 10 therapy centers in 2012, the US has about xx centers in 2014. The country is expected to have about xx centers in 2017 and xx by about 2020.

In terms of market value, the US proton therapy market was valued at about US\$500 Million in 2014. It is expected to reach market revenue of US\$ 1.5 Billion by 2020.

In the US the market is growing, but greater still is the potential given that access to proton therapy is limited due to the low number of proton therapy centers. What gives rise to positive sentiment is the fact that research institutes and hospitals are now investing in proton therapy to make it more accessible to patients.

We can expect that in future there will be more proton therapy centers opening up at strategic locations, while also considering the clusters where such potential patients would come from. This requires strategic and careful planning on the part of players to work around the hurdles of huge investments and land requirements.

Current figures indicate that the xx existing proton therapy centers in the United States will serve only xx% of cancer patients who may likely require proton therapy and only

these many patients will actually be able to receive it each year.

In the US more than xx Million people are expected to be diagnosed with cancer each year of which xx are expected to be eligible for proton therapy. With there being just xx existing centers in the US, the combined capacity for treatment with proton therapy is only xx patients each year. This means that there is a shortfall of about xx more treatment rooms. At an average cost of US\$ xx Million per facility, the treatment rooms and protons that can be and will be added in the years to come, represent the likely market scenario.

There is no denying that proton therapy is an expensive treatment methodology.

Though these are early days in the history of proton therapy the indications are that it will be expensive on its own or in comparison with other treatment forms.

Market analyses indicate that the relative cost of proton therapy is approximately 2.4 times that of x-ray therapies. Like with any new technology, the advancement yields cheaper and more powerful proton therapy tools.

We now have newer, more compact proton beam sources that are about four to five times cheaper and offer more accurate three-dimensional targeting. It is only logical to expect the costs to reduce as better proton technology becomes more widely available. While prices come down we can naturally expect greater availability, penetration and coverage which will push the market growth.

Though current costs are high it must be said that analyses indicate that the cost of proton therapy is not unrealistic and attempts should be made to increase access to this technology to a greater number of patients. Though there are some divergent opinions regarding the efficiency of the therapy, it has been found that in some clinical situations, proton beam therapy is preferable to the alternatives.

With new developments in proton beam technology coming up on the horizon, such as improved scanning techniques and more precise dose delivery or 'pencil beam scanning', the cost, effectiveness, availability and reach of the therapy are expected to change and in due course erase the concerns about the effectiveness of proton therapy for treating ailments such as prostate cancer.

The complexity and cost (US\$150-US\$225 million) of building and maintaining the facilities is the main reason for the small number of centers. Comparing standard

radiation therapy and proton therapy we find that equipment needed for standard radiation treatment can usually be added to an existing hospital or treatment facility, but proton beam therapy equipment cannot be easily added as it requires constructing a specialized building and installing complicated and expensive equipment.

In terms of cost and affordability, there have been a few studies that have shown that proton therapy actually brings cost savings, especially in the context of second generation, and much less expensive, proton therapy equipment now available.

This is true when we consider the long-term cost of a patient treated with proton therapy when compared with that of a patient treated with surgery or IMRT. Given that proton therapy patients experience less side effects and a better quality of life, which in turn leads to lesser ongoing medical and societal costs associated with that patient, this analysis should provide a positive turn to proton therapy in terms of cost.

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