



Effective Health Care

Proton Beam Facilities Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Proton beam facilities was found to be addressed by a recent technical brief titled *Particle Beam Radiation Therapies for Cancer*. Given that this report covers the nomination, no further activity will be undertaken on this topic.
 - Trikalinos TA, Terasawa T, Ip S, Raman G, Lau J. Particle Beam Radiation Therapies for Cancer. Technical Brief No. 1. (Prepared by Tufts Medical Center Evidence-based Practice Center under Contract No. HHSA-290-07-10055.) Rockville, MD: Agency for Healthcare Research and Quality. Revised November 2009. This report is available at [http://effectivehealthcare.ahrq.gov/ehc/products/58/173/particle%20beam%20mainreptrev11-09\(r\).pdf](http://effectivehealthcare.ahrq.gov/ehc/products/58/173/particle%20beam%20mainreptrev11-09(r).pdf).

Topic Description

Nominator: Individual

Nomination Summary: The nominator states that the building of multimillion dollar proton beam facilities may not be a good use of resources. The nominator does not pose specific clinical questions; however, it may be interpreted that the nominator is requesting new research on the efficacy of proton beam therapy versus intensity modulated radiation treatment for prostate cancer.

Key Questions from Nominator: None

Considerations

- The topic meets all EHC Program selection criteria (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- This topic was found to be addressed by a technical brief titled *Particle Beam Radiation Therapies for Cancer*. The key questions from this report include:

Section 1: Description of the Therapies

1. What are the different particle beam radiation therapies that have been proposed to be used on cancer?
2. What are the theoretical advantages and disadvantages of these therapies compared to other radiation therapies that are currently used for cancer treatment?
3. What are the potential safety issues and harms of the use of particle beam radiation therapy?

Section 2: Instrumentation Issues

1. What instrumentation is needed for particle beam radiation and what is the FDA status of this instrumentation?
2. What is an estimate of the number of hospitals that currently have the instrumentation or are planning to build instrumentation for these therapies in the USA?
3. What instrumentation technologies are in development?

Section 3: Description of the Literature

- Systematic literature scan on studies on the use and safety of these therapies in cancer, with a synthesis of the following variables:
 - Type of cancer/patient inclusion criteria
 - Type of radiation/instrumentation and algorithms used
 - Study design/size
 - Comparator used in comparative studies
 - Concurrent/prior treatments
 - Length of follow up
 - Outcomes measured
 - Adverse events/harms/safety issues reported