

EDITOR'S CHOICE

Don't beam me up just yet

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Proton beam therapy might once have seemed like the magic bullet to zap cancer, the state of the art treatment we have all been waiting for. The technology is big and expensive—the world's “most costly and complicated medical devices,” according to one description cited by Keith Epstein in this week's cover article (doi:10.1136/bmj.e2488)—and looks and sounds as if a *Star Trek* scriptwriter might have dreamt it up. As Epstein writes, “by accelerating subatomic particles towards the speed of light and concentrating them in a beam, proton treatment is thought to target cancerous tissue more precisely.” England's health secretary, Andrew Lansley, clearly believes it represents the future of cancer services—his department announced earlier this month that it would spend £250m on two National Health Service centres for proton beam therapy. But where did he get his evidence? The treatment hasn't been appraised by the National Institute for Health and Clinical Excellence (doi:10.1136/bmj.e2627), and, as Epstein reports, a study this week of 12 000 US patient records shows that men with prostate cancer treated with proton beam therapy had no better outcomes and had more complications than those who had conventional radiotherapy. “The cost of proton therapy for prostate cancer is typically about twice as much as conventional radiation, three times as much as surgery, and four or five times as much as brachytherapy,” writes Epstein.

So what's it good for, if anything? There is evidence of effectiveness in treating children, “whose tissue can be highly sensitive to stray radiation,” and for some rare brain cancers; but clearly, says Epstein, it needs to benefit many more patients—the numbers that the more common cancers might deliver—to justify the cost.

The United States, which has 10 proton beam centres, spends more on cancer treatment than Europe and has better outcomes, reports another US correspondent, Bob Roehr (doi:10.1136/bmj.e2766). Cancer survival rose in both the US and Europe between 1983 and 1999, but the gap between them widened, as did the cost of treatment, a study found. However, the same study, published in *Health Affairs*, shows that despite higher overall healthcare spending, the US lags behind France, Germany, and the UK in overall life expectancy at birth.

Proton beam therapy aside, the UK is working to improve its record on cancer. A project is under way across England to identify reasons for variations in lung cancer outcomes and to find ways to improve quality of care (doi:10.1136/bmj.e2770). And meanwhile, the Royal College of General Practitioners has designated cancer the first of its new “enduring priorities,” and has entered into a five year clinical partnership with the charity Cancer Research UK aimed at improving the diagnosis and management of cancer in primary care (doi:10.1136/bmj.e2756). Greg Rubin, who is leading the partnership, acknowledges that five years might seem too short a time in which to make a difference to cancer. But this is a good start. And perhaps in five years we will have more comparative effectiveness data on proton beam therapy: as Epstein reports, the first randomised controlled trial comparing x rays with proton beams is about to begin.

Poll: Is spending on proton beam therapy going too far too fast? Vote now on bmj.com.

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