

Aiming to be a roaring success in the field of cancer treatment

KSS AHSN is supporting an innovative Surrey-based company that aims to change the way cancer therapy is delivered. Leo Cancer Care, based in Horley, makes upright radiotherapy products, including a proton beam therapy (PBT) device, with the potential to save the NHS millions of pound and increase patient throughput.

The company's products use a unique upright positioning system alongside upright imaging modalities, which can be installed more quickly, more cheaply, and take up a fraction of the space of traditional machines.

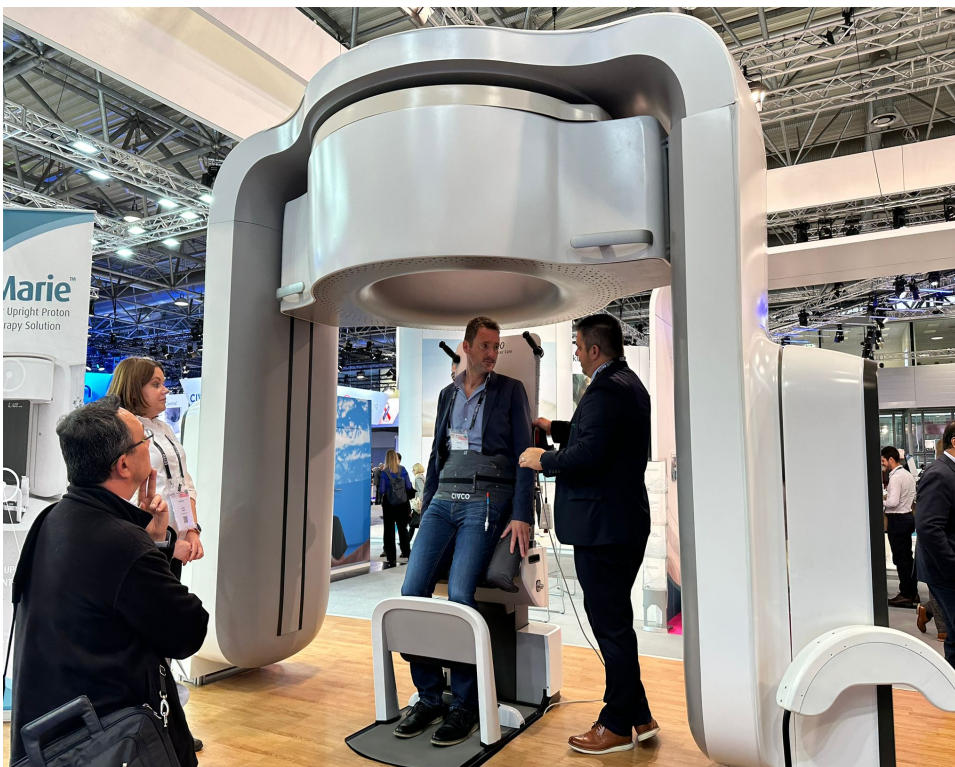


The Economic Case

Leo Cancer Care employs c.50 UK staff and is recruiting for roles in mechanical engineering, medical physics, product development, training, and other fields. It has invested in the region since 2020, expanding from one to three industrial units; it is now considering a move to larger premises in the Gatwick area. The company also has an office in the USA and staff based in Asia and Europe as it explores the global market.

The company has four US customers, one in France, and is preparing to submit a CE mark application to obtain regulatory approval for use in the NHS. KSS AHSN recommended the company's inclusion in the AHSN Network's Innovation Feature Zone at the NHS ConfedExpo in June 2023. It was one of only 24 innovation companies in England to be selected to participate

We have supported the company to commission evaluation and validation reports, leading to a cost-benefit analysis and budget impact model. These found that the company's Marie™ proton therapy system could lower the cost and waiting list backlog in the NHS and yield a greater return on investment compared to existing NHS machinery for cancer treatment. However, the potential impacts on the NHS are yet to be determined.



"Leo Cancer Care has enormous potential to make a positive difference to cancer treatment in the NHS.

'We are providing support to build an evidence base to help this innovative company achieve its ambitions.'

**Nuala Foley, KSS AHSN
Associate Director
Commercial and
Enterprise**

About Leo Cancer Care

Base: Horley, Surrey

Business: manufacture of innovative devices to provide proton beam therapy

Size: c. 50 UK-based staff, with plans to expand, and an office in Wisconsin, USA

In numbers:

- £25,000,000 in private investment
- £1,800,000 in US export sales
- £26,800,000 – total revenue
- 50 + UK jobs created

KSS AHSN has also:

- Conducted detailed horizon scanning for the company, outlining radiotherapy commissioning and access for the whole UK
- Facilitated introductions and meetings with a large national cancer charity.
- Scoped discussions and market feedback from local Cancer Alliances.
- Provided strategic planning to support NHS access.

The Healthcare Case

Research indicates that half the GB population will get cancer at some time, and while survival rates have doubled in the last 40 years, OECD data shows UK cancer deaths per 100,000 of the population are 13th highest out of 42 countries, with nine out of ten cancer survival rates worse in Britain than in Europe.

While most cancer patients receive treatment laying on their backs, research indicates that this is not always the best possible position (*Leo Cancer Care Evaluation Report, Unity Insights, Sept 2022*). Further research is recommended as to whether the Leo devices will improve treatment quality and about the long-term benefits and side effects, but research to date shows that PBT can reduce long-term morbidity (Limb, 2019).

What is PBT?

Oncologists deploy a variety of treatments, including chemotherapy, which uses medications to kill or shrink cancer cells. Radiotherapy remains a crucial treatment, with most patients treated by photon therapy, using high energy x-rays. While effective, it can damage normal cells and cause side effects.

PBT use protons instead of x-rays, which can help to reduce the risk of long-term side effects. The proton beam releases little energy as it passes through normal cells but releases a large amount of energy on reaching cancerous cells, with less damage to normal cells. It is only suitable for a small number of people with certain cancer types, particularly tumours of the brain, spinal cord, liver, prostate, and pancreas.

PBT is still relatively new in the UK, with two therapy centres in London and Manchester expected to treat c. 750 patients per year (c.1% of those receiving radiotherapy in England). However, projections indicate that PBT will be required for 10% of future radiotherapy treatments (Farr et al., 2018).

Current standard photon radiotherapy devices work by rotating very large radiation production systems with gantries up to 600 tonnes in mass around a static patient, which is expensive. The Leo system slowly rotates the patient, not the machine.

