

# FLASH NOTE

## Advanced Oncotherapy (AVO-GB)

### Software unlocks full potential of LIGHT

#### KEY TAKEAWAY

**Advanced Oncotherapy ("AVO") further paves the way for commercialisation of its linear proton treatment ("PT") system LIGHT. Software is a key element for optimisation of beam delivery. Raysearch will add its treatment planning system ("TPS") RayStation to LIGHT. A sophisticated TPS can unlock the full potential of any beam delivery system. In contrast, low quality TPS solutions often make state of the art photon and proton beams perform worse than second tier linacs with top software. We feel that LIGHT is now significantly de-risked by having RaySearch as a development partner. LIGHT has a greater potential than PT cyclotrons to replace a significant share of Photon Linacs. The replacement power is based on technical superiority, price and easy instalment. We reiterate both our OUTPERFORM recommendation and target price of 155 GBp.**

**Software is the key differentiation factor for medical instruments and AVO has chosen the best TPS on the market** - We believe LIGHT and laser based PT have the greatest potential to replace a significant share of photon linac. While laser based technology is a decade away from delivering a commercial product, AVO's LIGHT enjoys a prime market position. Software is driving the performance of medical instruments and has become the most important differentiation factor for stale hardware innovation. While LIGHT has still brought significant innovation power with its hardware, we feel that Raystation not only validates its technology, but also increases LIGHT's commercial potential exponentially.

**Software brings technological advantage and RaySearch is best in class** - RaySearch is hardware neutral, in contrast to Varian's and Elekta's proprietary TPS, Eclipse and Monaco, which are second tier TPS solutions. With this collaboration two best in class systems of its kind result in a single integrated system. Besides, AVO could carve out a significant advantage with their modular hardware system. The modular system allows a much faster and easier installation almost comparable with conventional Linac. AVO and Raysearch could tap into a new market for mid-sized hospitals, which could be a significant volume play for both.

**Accelerated installation of LIGHT could take it to a faster adoption rate.** The cyclotron technology involves lengthy and complicated building preparation. Heavy cyclotrons and large concrete bunkers make the installation a major building project, which is, regardless of pricing, often a big hurdle. The advantage of AVO's technology being faster and less complicated combined with a cheaper production process, could give the company a fast head-start with a future margin expansion opportunity driven by an attractive service revenue stream.

**Price of PT machines is not the biggest hurdle.** While the current debate in the clinical community is about pricing and clinical evidence, we believe that the above-mentioned installation hurdles are more significant in holding back a faster adoption rate. In our previous update report we compared cost of cancer treatments, which made PT look less expensive over a longer time period compared to drug-based approaches. We feel that the pricing element will become even less of an issue once the read out of trials comparing PT vs. Radiotherapy ("RT") in 2020 brings clinical evidence to light. Should PT machines stay at the \$15m price band by 2030, margins could look significantly more attractive for the whole PT industry.

**The Proton therapy industry offers significant structural growth.** We assume a PT conversion rate of 15% by 2030, which would make it a c.\$8.0bn market (\$4.5bn for 380 machines in that year sold and \$3.5bn for the service of all machines installed up to 2030 (c.2,900 PT vs. c.16,500 conventional PT machines)). PT is amongst the most attractive subsectors in Medtech, which grows significantly above the sluggish Medtech sector with low single digit top line growth. Medtech as a whole has lost its steam due to lack of innovation, which was followed by price pressure from payers, who no longer pay top dollar for commoditised devices and instruments.

We reiterate both our OUTPERFORM recommendation and target price of 155 GBp.

## OUTPERFORM

Price target 155.00p

Price 53.50p

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## COMPANY DESCRIPTION

Advanced Oncotherapy plc, together with its subsidiaries, focuses on providing radiotherapy systems for cancer treatment through the use of a novel proton therapy technology to healthcare providers and hospitals. It is developing Linac Image Guided Hadron technology, a next generation of proton therapy system for treating cancer. The company was formerly known as CareCapital Group plc and changed its name to Advanced Oncotherapy plc in September 2012. Advanced Oncotherapy plc was incorporated in 2005 and is headquartered in London, the United Kingdom.

## SCENARIOS

### Base Case - GP Investment Case

Proton therapy penetrates the conventional radiation therapy market by 15% in 2030. AVO will be able to get a market share of around 15%. Price per treatment room will come down to \$7.5m and accelerates sales growth.

### Bluesky Scenario

Proton therapy penetrates at a faster pace and goes up to 30% or higher. AVO will maintain or increase market share in an oligopolistic market. Price per treatment rooms will be as high as \$15m - scale effects improve margins.

### Downside risk

Proton therapy penetrates at a slower pace and goes up to only 10% by 2030. AVO may have significant delays and its market share in PT remains low as a result (10%) in 2030. Competitors could develop a competing linac with a modular system.

## SWOT

**Strength** - AVO has a promising modular system, which could be cheaper and faster installed in hospitals.

**Weakness** - The company is small in size, early stage and has a limited financial strength compared to its competitors IBA, Varian, Hitachi, etc.

**Opportunity** - Growing clinical evidence and patient driven demand could accelerate adoption rate more than expected.

**Threat** - Capital constraints on healthcare budgets and underwhelming evidence for PT could be replaced by carbon ion RT. Partnerships are instrumental for AVO's success and there is a significant risk of terminations or delays.

## INDUSTRY EXPECTATIONS

The industry is expected to benefit from a higher adoption rate for proton therapy fuelled by growing clinical evidence. Prices for treatment rooms are not that high when broken down on a per patient basis vs. modern drug therapy. Thus, prices for PT treatment rooms are expected to come down only moderately.

Software and better of imaging is expected to improve beam delivery and help adoption rates

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- Advanced Oncotherapy Plc (AVO-GB)
- Medical Technology (MT)

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### AVO-GB

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