

Startup grant helps cancer patients breathe well during radiation treatment

Our body's reaction to stress, elation and exertion are all measured by our rate of breath, how deeply we inhale and exhale, and at what pace. The effects of calm and considered breathing are said to be immeasurable upon our immediate health.

But what if the power and stability of our breath could be used to assist in the treatment of cancer?

It's this exact theorem that co-founder and Chief Operating Officer of Opus Medical, Dr Sean Pollock, set out to research as part of his PhD at the University of Sydney.

Originally pioneered by Paul Keall, a professor in the School of Medicine at the University of Sydney, and now company director at Opus Medical, Breathe Well is an interactive breathing guide that helps to reduce errors in radiation therapy for patients with cancer.

The equipment allows patients to play an active role in improving the quality of their treatment.



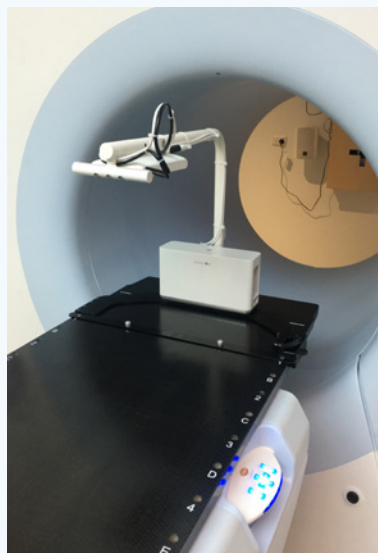
Chief Operating Officer of Opus Medical, Dr Sean Pollock.

Improving cancer treatment

Unstable and irregular breathing motion is a common problem in radiotherapy treatment, particularly for patients suffering from lung, liver, kidney, pancreas and breast cancer.

Breathe Well helps patients to self-regulate and stabilise their breathing during radiotherapy, so a moving tumour can be more accurately targeted.

'Guiding the patient to breathe effectively leads to more accurate imaging and treatment, less damage to healthy tissue, less radiation side-effects and reduced health care costs', says Dr Pollock.



The technology uses a motion sensor camera to detect breathing patterns and a patient-customised interface to advise patients how best to adjust their breathing.

The monitoring and training can also assist in ensuring that radiation treatment across multiple days will consistently target the same area of cancerous tissue, lessening the chances of damaging surrounding healthy tissues.

The Breathe Well machine helps patients to stabilise breathing during radiation treatment.

The need for investment: Opus Medical meets Jobs for NSW

Breathe Well has passed through business incubator and accelerator programs including Genesis and Incubate. The startup also participated in the NSW Health Medical Device Commercialisation Training Program and the 1776 Challenge Cup—a global tournament seeding out the most promising and highly scalable startups.

Alongside this, a number of public and private hospital radiation oncology centres in NSW and ACT have opted to participate in studies using the technology, with lung and breast cancer radiotherapy the focus of these studies.

‘The initial feedback from our hospital studies has been overwhelmingly positive’, says Dr Pollock.

‘Staff are already asking how and when they can fully implement the technology. We know that current devices in the market monitor patient breathing motion, but they don’t address the problem of unstable breathing’.

In August 2016, Jobs for NSW supported the company with a **Building Partnerships** grant, helping them to advance their prototype to take to market.

The grant contributed to an upgrade to software and hardware design and further evidence-based user-testing.

‘Completion of the prototype allowed us to get direct product feedback and fine-tune our technology in order to meet our customers needs’, says Dr Pollock.

‘Our partnered hospitals will be the first adopters of the commercialised device. We will then look at expanding our team, boosting sales nationally and exploring international certification, which would be a big milestone for us’.

Opus Medical hopes to roll out additional functionalities within the device to include lung, liver, kidney and pancreatic cancer. This development will create key operational, sales and customer service roles in-house.

Global growth opportunities

Appetite for the product is strong, with hospitals in San Francisco, Dallas, Seattle, Portland, Sacramento, Seoul and Aarhus (Denmark) all planning to participate in studies using the technology. Breathe Well had a 100% uptake rate on study participation requests, with several additional hospitals requesting to be included.

The lack of comparative products in-market, paired with the fast-build, low-cost manufacture model of Breathe Well, paint it as a highly scalable venture. And while NSW will act as the launching pad to scale across Australia, expansion into international markets is at the forefront of the company’s growth plan.

To aid this, Opus Medical was awarded a \$1.3 million grant from the NSW Health Medical Devices Fund in October 2016, which aims to bring innovative medical technologies to market. The grant has been used to employ more staff, and kickstart operations within Australia.

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