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# Pneumowave Breathes Easier In Its Fight Against Opioid Deaths After Completing £7.5m Raise

by [Barnaby Pickering](#)

The Glasgow-based company has completed a large series A round to further develop its technology, which can be used to help save patients' lives in the event of opioid overdose. *Medtech Insight* spoke to the Scottish National Investment Bank, one of the main investors, about the deal and its altruistic view of investment.

Pneumowave, developers of technology to monitor patients for respiratory distress, has completed a fundraise.

The series A round, worth £7.5m (\$9.3m), is comprised of a £5.2m equity investment from the Scottish National Investment Bank ("The Bank"), with the remaining £2.3m coming from pre-existing investors, Scottish Enterprise, IIG, Equity Gap, Alba Equity and London and Scottish Investment Partners.

The round was also joined by the Boston-based investor Mark Bamforth of Thairm Bio – an investor that could be highly advantageous for the company as it prepares to expand its presence into the United States.

The inspiration for the Glasgow-based start-up came from founder Bruce Henderson's time as a forensic medical examiner, during which he observed a huge upsurge of deaths in Scotland due to opioid abuse.

Opioids switch off regions of the brain that control breathing, so his idea was to build a device that could monitor this breathing, and then send alerts to emergency services. This would increase the odds of nasally administered naloxone, marketed as NARCAN in the US and Nyxoid in the UK, working. (Also see "[Start-Up Spotlight: PnuemoWave Hopes Sensor Tech Can Prevent](#)



[\*Opioid Deaths\*](#)" - Medtech Insight, 19 Jan, 2022.)

In the time since, the company has continued to work on its technology and is also beginning to investigate its potential uses in chronic obstructive pulmonary disease (COPD) and pediatrics – the prior affecting more than 400m people worldwide. It is currently aiming to get regulatory approval during 2024.

## **Discussing The Bank's Investment Ideals**

Medtech Insight spoke to Paul Callaghan, director of innovation at the Scottish National Investment Bank to find out why it invested in Pneumowave.

He explained that central to The Bank is its vision. The Bank, whilst being commercially oriented – offering the standard array of financing mechanisms in return for gains – looks for projects and businesses capable of having a transformative influence on both society and the economy.

It is sector agnostic, investing in a range of businesses covering renewables, social housing and even orbital launch services. “With companies like Pneumowave, this alignment with our overall ethos is clear. [The company] has a strong mission statement and we were also really impressed by its team,” he said, explaining The Bank's motives for investing.

In particular, he noted, Pneumowave was developing a product for a market that already existed. “Sometimes you see products looking for a market, but this is really the other way around – they really understand the problem they are trying to solve.”

And as potential investment, Pneumowave was very interesting. Not only did the company have a highly mission-driven purpose, but the amount of money it needed, £7.5m, to commercialize was well within scope for The Bank.. Not only did the company have a highly mission-driven purpose, but the amount of money it needed, £7.5m, to commercialize was well within scope for The Bank.

“The Bank has got a range of tools that we can deploy at our end – both debt and equity based. An investment can be as low as a million and up to 50 million. We can facilitate the level of investment required at this point,” he said.

## **Path To Commercial Success**

The Bank is acutely aware of the challenges Pneumowave faces.

Pneumowave's primary market comprises of patients either suffering from opioid addiction, or those taking large amounts of opioids to manage painful conditions.

Patients with addictions are notoriously underserved by health care though – simply because



public support for spending on a condition many deem to be self-inflicted is low.

When asked about this problem, and how it could impact The Bank's return on investment, Callaghan confirmed that The Bank was proud to invest in health care developments that can benefit a broad range of conditions, and believes that Pneumowave has a strong future ahead.

"We take a commercial view with every investment," he explained. "We are not a grant-giving organization. Obviously, we recognize the risk, but we really diligence these opportunities."

"Health care companies can target different geographies and gain reach through different organizations," he said. "The Bank models different scenarios to ensure a commercial return on its investment."

Another challenge Pneumowave faces relates to its geographic location.

Like all medtech start-ups Pneumowave will soon have to answer questions about where it plans to first launch its products.

The UK, with its yet-to-be fully established regulatory framework and the European Union with its delay-laden notified body system are both tricky seas to navigate for start-ups, who often need to become revenue generating as fast as possible.

Not even the US is a sure bet.

Previously, Pneumowave would have been guaranteed reimbursement for its technology after being granted breakthrough status, however the Biden administration's decision to repeal the Medical Coverage for Innovative Technologies (MCIT) rule threw this into question.

### ***The Problem With Addiction***

In a previous interview with Medtech Insight, the CEO of Pneumowave, Bruce Henderson discussed the issue of treating addictions. He pointed out that whilst Pneumowave's technology itself will not solve opioid addiction, it can help ensure patients live long enough to receive proper treatment.

Ian Crosbie, CEO of Sequana Medical agreed that the understanding of addiction treatment is lacking. The company's Alfapump, a technology for removing excess fluid in patients suffering from alcohol-induced ascites, does not currently have a clear path to reimbursement, despite being both better for the patient and easier to administer, compared to manual needle-based draining. (Also see "[Exec Chat: Sequana Medical Pursues Dual Device-Drug Strategy For Fluid Overload](#)" - Medtech Insight, 19 Aug, 2022.)



Henderson explained that, as a result, the company may have to look into novel reimbursement, something he said could extend timeframes for the company. He did note, however, that the current codes are for intermittent patient monitoring, and not 24/7 coverage like Pneumowave's technology provides.

“Our primary focus is to obtain US FDA class 2 medical device clearance via the de novo pathway, leveraging our FDA breakthrough device designation,” Henderson said. “Appropriate, validated treatments that reduce the risks associated with opioid use should be available for all patients, whether prescribed opioids for pain, or suffering from addiction.”