

Checkpoint Cardio

Ivailo Dachov

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As the coronavirus spread from China across much of the world, health organisations urged those who may have the disease to self-isolate to stem the spread of the virus. This process brought into fresh perspective the value of technologies that allow medical staff to remotely monitor the health of people.

Start-ups such as Bulgarian firm Checkpoint Cardio provide just this kind of coverage. The business began five years ago after a doctor friend of founder, Boris Dimitrov, complained that it was impossible to know how patients were progressing once they left the surgery.

This is a clear problem throughout the world, as practical and financial factors mean many patients are released from hospital with conditions that require monitoring and managing, but the tools needed to support this process don't exist. The company began by working with wearable devices already on the market to capture the data they need, but quickly realised that they would need to develop their own technology.

Preventative care

Across the platform, the company is now monitoring over 40 000 patients, which has given them a lot of data, not only on the health of the patients themselves, but the benefits they and healthcare providers gain from real-time monitoring.

'You discover a lot of hidden conditions that would ordinarily have resulted in another visit to the hospital,' CTO Ivailo Dachov said. 'We're beginning to gain an insight into why the mortality rate from cardiovascular diseases is so much higher in Europe than elsewhere in the world. This exists because there is no early detection and prevention of cardiovascular diseases.'

The company conducted clinical research on approximately 6 000 patients, and their system was able to discover new cardiac conditions in approximately 74% of cases, with most of these receiving new treatment as a result.

The system is also notable for the efficient pairing of sparse human resources with the latest technology to create scalable and effective monitoring. The platform provides AI-based monitoring at the first level, with nurses and then doctors becoming involved as situations demand.

'A shift of four trained nurses with one doctor can observe up to 1 000 patients simultaneously thanks to the AI,' Dachov said. 'The wearable device can also be installed by lay people, so we preserve highly-trained medical staff for the work they are specifically trained for.'

Digital disruption

Such technologies hold considerable promise, not only in providing remote monitoring for coronavirus and other conditions, but reducing health inequalities by expanding coverage. These inequalities require European health



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systems to get better at adopting new technologies, which is ironically something that the coronavirus outbreak has aided as it has created a real sense of urgency to deploy the best technologies.

For much of the company's existence, however, they have relied on partnerships, such as that with EIT Digital, to find scientific and industrial partners to both develop their technology and bring it to market. Funding from scientific bodies was especially useful as it allowed the company to take a longer-term approach to their development, with the EIT also facilitating the international growth of partnerships.

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The entrepreneurial journey is seldom easy, and Dachov believes grit and determination are the most important ingredients for entrepreneurs to have to enable them to overcome the inevitable setbacks that will strike any start-up, but the growth of Checkpoint Cardio is being brought to bear on some of the most challenging situations facing Europe today.

'In Bulgaria, we have a saying that it is often the darkest before the dawn, and we have had to overcome numerous dark times during the development of our business, but we are now able to make a real difference to people's lives,' Dachov said.

