NHS hospitals turn to deep learning and advanced algorithms to fight heart disease

- The HeartFlow Analysis is now available in 13 hospitals in England to help physicians diagnose Coronary Heart Disease, one of the leading causes of death in the UK
- The National Institute for Health and Care Excellence (NICE) estimates that the HeartFlow Analysis can save the NHS a potential £9.1 million per year

REDWOOD CITY, Calif. – August 15, 2018 - New technology using deep learning and advanced algorithms to evaluate blood flow to the heart is now being used in English hospitals to fight against coronary heart disease.

Coronary heart disease (CHD) is one of the leading causes of death in the UK. It is responsible for more than 66,000 deaths each year and it is estimated that 2.3 million people in the UK are currently living with the disease[i]. CHD develops when the arteries leading to the heart narrow or become blocked, which can reduce blood flow, and cause chest pain and heart attacks[ii].

The HeartFlow® FFRct Analysis is being supported by NHS England as part of the Innovation and Technology Payment (ITP) programme to help physicians better diagnose coronary heart disease. It provides the highest diagnostic performance compared to other commonly available tests[iii] and is able to help physicians identify coronary disease often missed by other tests, while reducing the need for unnecessary tests, such as an invasive diagnostic angiogram[iv]. The National Institute for Health and Care Excellence (NICE) estimates HeartFlow can save the NHS approximately £9.1 million per year[v].

Under the ITP, the HeartFlow Analysis is currently available in 13 hospitals across the country with a view of being rolled out in more than 35 hospitals by the year's end.

Currently, it takes most hospitals several weeks to diagnose and develop a treatment plan for coronary heart disease. HeartFlow may be able to help shorten this timeline.

Using deep learning and state-of-the-art data processing following a coronary computed tomography (CT) scan, the HeartFlow Analysis creates a detailed digital 3D model of the patient's arteries. It then applies advanced algorithms to solve millions of complex equations to assess the impact of any blockages on blood flow to the heart.

People experiencing chest pain should visit their GP or a rapid access chest pain clinic, where a physician can request a CT scan. If needed, a HeartFlow Analysis can be applied to CT scan results for patients.

Professor Tony Young, national clinical lead for innovation, NHS England, said: "To allow exciting innovations to flourish and spread, NHS England has footed the bill for a select group of products, such as the HeartFlow Analysis which could reduce the need for invasive tests, so patients can benefit faster."

"From the very beginning the NHS has been at the forefront of driving innovation. As we look to develop our long-term plan, the NHS will continue to champion world-leading technology."

Dr. Timothy Fairbairn, MBChB, FRCP, Ph.D., consultant cardiologist, Liverpool Heart and Chest Hospital, said: "This technology has exciting benefits for patients, physicians and the NHS. It helps to diagnose coronary heart disease more quickly and more effectively whilst

![HeartFlow logo]

reducing reliance on more invasive procedures. In Liverpool, we have seen how the clinical introduction of the HeartFlow technology is helping improve patient management by reducing waiting times and positively influencing clinical decision making."

"The national support for the HeartFlow technology shows the NHS' commitment to innovation and implementing new technologies that can help improve the patient experience while delivering the best possible outcomes."

In recognition of its innovative technology, HeartFlow was recently awarded the Advanced Diagnostics, Genomics and Precision Medicine Award by the West Midlands Academic Health Science Network (WMAHSN). The awards were established in 2016 to recognise and celebrate the work of individuals and organisations in developing better healthcare and increasing wealth for local people.

"We are proud to be working with the NHS to make this state-of-the-art technology available in England, to help physicians diagnose and treat one of the leading causes of death in the country," **said John H. Stevens, M.D., president and chief executive officer, HeartFlow.** "We will be working hard to ensure HeartFlow can help improve the overall patient experience, by both helping physicians identify heart disease which may have otherwise been missed and delivering significant cost benefits to the NHS."

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About HeartFlow, Inc.
HeartFlow, Inc. is a medical technology company transforming the way heart disease is diagnosed and treated. Our non-invasive HeartFlow Analysis leverages deep learning to create a personalized 3D model of the heart. By using this model, clinicians can better evaluate the impact a blockage has on blood flow and determine the best treatment for patients. Our technology is reflective of our Silicon Valley roots and incorporates decades of scientific evidence with the latest advances in artificial intelligence. The HeartFlow Analysis is commercially available in the United States, Canada, Europe and Japan. For more information, visit www.heartflow.com.

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[i] https://www.bhf.org.uk/-/media/.../heart-statistics/bhf-cvd-statistics---uk-factsheet.pdf

[ii] https://www.nhs.uk/conditions/coronary-heart-disease/

[iii] Driessen, et al. Presented at EuroPCR 2018. Nørgaard et al, Euro Radiology 2015; 25(8):2282-90

[iv] Douglas et al. PLATFORM Trial. Eur Heart J. 2015;36(47):3359-67

[v] https://www.nice.org.uk/about/what-we-do/into-practice/cost-saving-guidance