

UK first for The London Chest Hospital

CT images in less than half a heartbeat to assist cardiac research

The London Chest Hospital, part of Barts and The London NHS Trust, has installed the first Siemens SOMATOM® Definition Flash CT system in the UK for fast CT speed combined with the lowest radiation dose. The scanner purchase was made possible by funding from The National Institute of Health Research (NIHR), enabling experts at Barts and The London Cardiovascular Biomedical Research Unit to undertake cardiac research.

The Definition Flash CT is a new to market system that can perform a detailed scan of the entire heart in just 250 milliseconds, which is less than half a heart beat.

Due to its high scanning speed, patients are exposed to a much lower radiation dose. For the first time ever, the heart can be examined at a radiation exposure level that is three times lower than the background radiation a person naturally absorbs in a year.

“The Definition Flash will be an invaluable tool for helping in the research of new treatments for cardiovascular disease as it presents a much clearer picture of the workings of the heart,” said Professor Anthony Mathur, Head of Advanced Cardiac Imaging at Barts and The London NHS Trust. “The CT will also be a frontline diagnostic tool for patients presenting with chest pains. At the moment, blood tests are carried out to assess for myocardial infarction. A number of patients who present with chest pain may not be immediately diagnosed with a heart condition because they are at an early stage and their condition may not be picked up until much later. In future, atherosclerosis can be detected earlier and at a much lower dose than previous CT scanners potentially preventing the serious consequences of a heart condition.”

The Definition Flash CT has a temporal resolution of just 75ms, which means that image quality is still high even if a moving object is being scanned. For this reason, the heart does not need to be slowed with beta blockers before a scan to deliver high quality clinical images. This is a quicker process and less disruptive for the patient. The entire chest region can also be imaged in just 0.6 seconds without breath holds from the patient so images are far clearer and the examination is less stressful.

“Cardiovascular disease is a growing threat in the UK. A rapid and precise diagnosis is vital for improving patient outcomes,” said Malcolm Pickering, Regional Sales Manager at Siemens Healthcare. “As a new standard in CT, the Definition Flash will assist the cardiac research teams at Queen Mary University of London and The London Chest Hospital by unlocking vital information from deep inside the heart, quickly and accurately.”

The NIHR has designated Barts and The London NHS Trust and Queen Mary, University of London, a Biomedical Research Unit in advanced cardiac imaging.

“I am delighted that the National Institute for Health Research is able to fund the purchase of this cutting edge new technology,” said Professor Dame Sally C. Davies, Director General of Research and Development at the Department of Health. “Any new technology that allows us to detect heart problems at an earlier stage while exposing patients to less radiation is very good news. The sooner patients know there is a problem, the sooner they can begin to take action to prevent more serious problems later on.”

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Picture caption: The London Chest Hospital, part of Barts and The London NHS Trust, has installed the first Siemens SOMATOM® Definition Flash in the UK to assist with cardiac research.

