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New scanner revolutionizing heart disease detection Canada Diagnostic Centres offers the latest in heart imaging

Vancouver, BC – For years, Canadian heart patients have endured invasive catheter angiograms to check for blocked, narrowed or diseased arteries. Now these same patients can lie comfortably while state-of-the-art imaging technology performs a “virtual” or coronary CT angiogram (CCTA) with three-dimensional imaging of the heart and arteries.

CCTAs are performed in seconds using a specialized 64-slice CT (computed tomography) scanner that is now available at Canada Diagnostic Centres (CDC) in Vancouver and only a few other facilities across Canada.

For the first time, medical imaging is sophisticated enough to capture diagnostic quality images of a beating heart and its coronary arteries. CDC's 64-slice CT scanner, manufactured by Toshiba, represents a revolutionary advancement in diagnostic imaging by providing physicians with some of the clearest, detailed images of the coronary arteries and heart available today.

Like traditional catheter angiography, CCTAs provide physicians with a view of the inside of the artery. However, CCTAs can also see inside the vessel wall where heart disease typically begins, and can rule out non-cardiac reasons for chest pain. This innovative heart scanning technology was recently profiled in the September 5, 2005, issue of *Time*.

"The 64-slice CT scanner is a major advancement in the way coronary artery disease is diagnosed," said Dr. Bruce Forster, CDC's Medical Director, Associate Professor of UBC's Department of Radiology, and Director of MRI at the UBC Hospital. "Medical imaging is finally fast enough to produce pictures of the heart that can be manipulated by a computer to produce remarkable two and three-dimensional images."

From a patient comfort perspective, CCTAs are a minimally invasive method of accurately measuring coronary artery disease and assessing some aspects of heart function. They require no sedation or hospitalization and, because the scan itself is complete in a matter of seconds, the entire procedure takes only about an hour. Patients are injected with a contrast solution to increase the visual detail of the scan and, in some cases, a beta blocker to lower the heart rate.

In comparison, conventional angiograms involve threading a catheter into the heart via a puncture of an artery in the groin or arm, and require patient fasting, sedation and hours of hospitalized recovery. The procedure and recovery take six to eight hours, and although safe, are uncommonly associated with complications such as bleeding, infection, and stroke.

"Over many years, catheter angiography has shown that up to 30 per cent of patients considered at risk for heart disease have 'normal' examinations," said Dr. Brett Heilbron, Clinical and Invasive Cardiologist at St. Paul's Hospital and Clinical Assistant Professor at UBC. "This is a lot for a patient to go through to come to this conclusion. On the other hand, early studies have shown that CT angiograms are highly accurate, and can be a viable exam for people with strong risk factors and atypical chest pain, or to clarify the results of other, inconclusive studies."

To produce these stunningly detailed pictures of the heart, the CT scanner rotates around the patient in less than half a second, taking 64 "slices" or images with each rotation. The greater the number of slices and speed of rotation, the better the resolution of the picture which is why the 64-slice CT scanners can create such extremely intricate images compared to the older 4, 8 and 16-slice CT scanners. A computer then reconstructs these slices into highly detailed, two and three-dimensional images.

The coronary CT angiogram program at CDC is the first to be jointly developed and managed by a radiologist and cardiologist, giving patients the benefit of both specialties. CDC's radiologists received training for the new scanner at Johns Hopkins University.

Founded in 1993, Canada Diagnostic Centres (www.canadadiagnostic.com) is a private medical imaging centre that provides MRI and CT scans in Vancouver and other locations across Canada. CDC provides quick access to the highest standard of quality for preventative and diagnostic scanning, while maintaining excellent customer service and patient care. The company uses the most scientifically advanced equipment, optimizing patient comfort and ensuring accuracy of image interpretation.