St. Paul's Hospital performs Canada's first implant of wireless cardiac device (June 30, 2006)

A patient in the Heart Centre at St. Paul's Hospital today became the first in Canada to receive an implantable cardiac defibrillator (ICD) that uses wireless technology.

Conventional ICDs have been used for many years in patients with abnormal heart rhythms who are at risk for cardiac arrest—the abrupt loss of heart function. ICDs are sophisticated devices implanted under the skin that are connected with leads positioned inside the heart or on its surface. ICDs have electronics that automatically monitor and treat abnormal heart rhythms recognized as life threatening, and, if necessary, shock the heart back into a normal rhythm.

The new wireless technology offers many advantages over the previous generation of implantable defibrillators, from efficiencies in the operating room to new ways to monitor patient health and disease progression.

Today's procedure, in which cardiologist Dr. Stanley Tung and his team implanted a wireless ICD into a 62-year-old male patient from Pemberton, BC, follows Health Canada's June 20 approval of a family of wireless cardiac devices manufactured by Medtronic Inc., a global leader in medical technology. Medtronic is the only manufacturer of wireless ICDs.

"We are extremely pleased that the Heart Centre at St. Paul's was selected as the site of the first wireless ICD implant," said Dr. Tung. "This is an exciting new era for implantable cardiac devices. Wireless capability brings the potential for many more applications down the road; this is just the beginning."

The wireless technology makes the implantation process simpler and less cumbersome. Instead of being connected by wires to hospital computer equipment, all testing and programming of the ICD can be done from a distance. The programming physician and computer equipment do not even need to be in the same room as the patient.

When patients attend the hospital clinic for check-ups, their ICDs' wireless capability will be activated. The devices will immediately begin communicating with hospital equipment, downloading information crucial to the patients' health and reprogramming the ICD if needed. These tasks can be accomplished simultaneously with multiple ICDs, a major advantage for a busy clinic like St. Paul's, which can see up to 30 patients a day. As a result, physicians can spend more time talking with patients.

Another benefit for patients is the ease with which their ongoing health can be monitored. Patients from out-of-town with wireless ICDs will not have to return to St. Paul's in person every six months for follow-up appointments. That's because the devices can transmit information, including a patient's heart failure status, over a regular phone line. An ICD can be coupled with a monitor in the patient's home that sends data streaming to their physician's computer with updates on how well the ICD is functioning and if the patient's heart rhythms have been normal.

The wireless ICDs use a radio frequency band specifically designated for medical implants, which protects them from interference caused by cellular or cordless phones and other common electronic devices. This provides a level of protection not offered by systems that use other frequencies.

The Medtronic wireless ICDs also help track and manage heart failure symptoms using another exclusive technology that monitors a common symptom of heart failure—the build-up of fluid in patients' lungs. The device measures fluid levels in the lungs many times a day to provide physicians with important clinical information about a patient's heart failure status. Physicians then have the opportunity to adjust the patient's heart failure treatment before their symptoms worsen, potentially avoiding hospitalization.

St. Paul's is the only hospital on the BC Mainland that implants ICDs, providing the service to patients from throughout the Lower Mainland, the Interior and the North.

Initially, ICDs were only implanted in patients who had survived a previous cardiac arrest, to prevent a recurrence. However, in recent years research has shown that, for some patients who are diagnosed with heart disease and poor heart function, ICDs can be used prophylactically to prevent a first cardiac arrest.

St. Paul's now implants more than 350 ICDs a year, nearly double the numberimplanted at the hospital just two years earlier.

Background

About the Heart Centre at St. Paul's Hospital

The Heart Centre at St. Paul's is known around the world for its work in the prevention of heart disease and for the care, treatment and support of people living with heart conditions. As a University of British Columbia teaching hospital, St. Paul's serves as a training facility for cardiac professionals and is a leader in heart disease research, both in the laboratory and in the clinic. In addition to treating patients with heart disease, the Heart Centre also focuses on prevention, helping patients stay well and out of hospital. St. Paul's is part of Providence Health Care, Canada's largest Catholic health-care organization.
About Medtronic, Inc.

Medtronic, Inc. (www.medtronic.com), headquartered in Minneapolis, is the global leader in medical technology – alleviating pain, restoring health, and extending life for millions of people around the world. Medtronic of Canada Ltd. is a member of MEDEC (Canada's Medical Device Technology Companies), which is the national industry association representing over 120 medical devices and diagnostic companies. Member companies are dedicated to serving the healthcare community through the provision of high quality medical products and services that benefit Canadians.