

MEDICAL SCIENCE



Ivar Mendez's remote-presence robot enters the hospital room of John Phinney as his wife Sandra visits. SANDOR FIZLI FOR THE GLOBE AND MAIL

Robot acts as doctor on call

The eyes and ears of a specialist can be used throughout the world

BY CAROL MOREIRA HALIFAX

Bedside manner is an important skill in any doctor. Now, a medical robot being tested at a Halifax hospital will allow doctors to export their empathy and expertise to any corner of the globe.

The remote-presence robot can travel to a distant ward or operating room and move about while being directed by a specialist in another location. The face and voice of the specialist are relayed to staff and patients via a voice box and a screen head attached to the robot's body.

"The robot is designed to move in any environment in the world and connect with patients and colleagues," explained Ivar Mendez, who is the current face and voice of the robot, as well as chief of neurosurgery at the Queen Elizabeth II Health Sciences Centre and chair of the Brain Repair Centre.

"The commands and responses are in real time, wherever you are. It can be used by any specialist in any field to provide expertise where needed," Dr. Mendez said.

"The cameras on the robot are so powerful you can see the

entire surgical field. ...The beauty of the system is that it can work through any broadband Internet connection."

Dr. Mendez predicts such robots will soon be as common as computer terminals in hospital settings. The technology has huge implications for dealing with wounded patients in remote areas such as Afghanistan, where specialists are in short supply.

Despite costing \$200,000 — the money came from an anonymous donor — the medical robot doesn't actually look very high tech, resembling a flat-screen TV balanced on top of a bulky, upright vacuum cleaner.

But take another look. This specialist, designed by InTouch Health of California, is the first and only remote-presence technology robotic system in Canada. And while it may not be particularly nimble, on its feet, its inelegant body conceals state-of-the-art technology.

It has camera eyes that deliver a 180-degree view and a screen head that rotates 360 degrees and tilts up and down. It's about the width of a person for ease of operation, but is a little shorter than the average

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Jeanne MacDonald

man to allow humans good eye contact with its head. Its body protrudes and is slightly wider at the base to allow the operator to see its feet and avoid collisions.

In a preview for the media yesterday, Dr. Mendez sat on the 12th floor of Dalhousie Medical Centre and consulted with patients and staff several blocks away at the Halifax Infirmary.

Sitting at his desk, he operated the robot with a small gear stick attached to his laptop. Images seen through the eyes of the robot as it moved through remote hospital corridors were relayed to his laptop and beamed onto a nearby wall. Lines representing the numerous sensors on the body pulsed and shortened to indicate nearness of objects.

Dr. Mendez consulted with research co-ordinator Paula Chiasson, who was on the ward and zoomed in on data she was taking from tiny computers implanted inside patients' bodies. The computers emit electrical impulses that mask patients' pain.

Dr. Mendez enlarged the data on his laptop and discussed it with Ms. Chiasson. He took a photo of a patient's wound and added it to her records.

He praised the subtlety of the robotic controls and said they were very easy to use. When the Halifax trial concludes in a few weeks, the robot will be tested at other regional hospitals. Dr. Mendez hopes that before long there will be a team of robots at every major medical centre in Atlantic Canada.

Patients seemed glad to see Dr. Mendez's friendly, youthful face, whether it was attached to his body or his robotic self.

Jeanne MacDonald, 46, a former weightlifter, endured a decade of pain after damaging her back when she tripped carrying her weights.

"Dr. Mendez is unbelievable," she said. "I'm always happy to see him. With this robot, he's like a kid with a new toy."

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