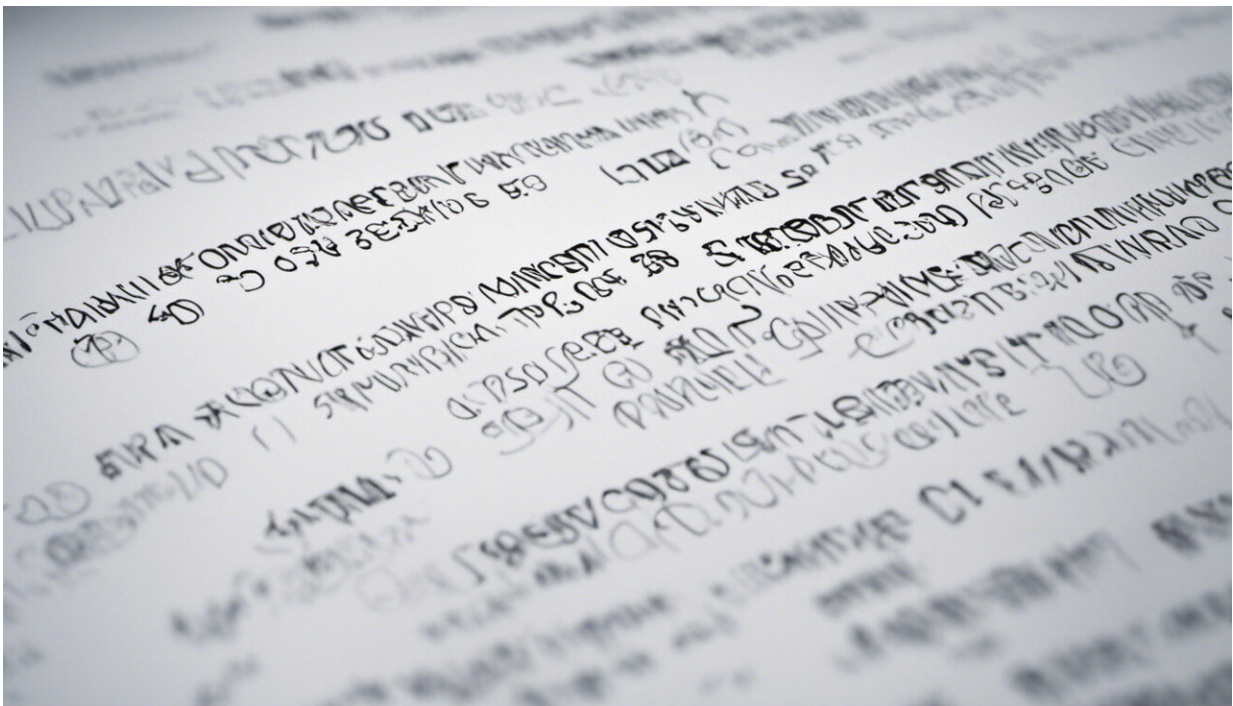


Remote medical diagnostics and treatment can help to ease pressure on Europe's healthcare systems

September 11 2017



Credit: AI-generated image ([disclaimer](#))

Haptic sensors, connectivity and efficient telecommunications are some of the factors that enable the uptake of medical telerobotic systems. Technical capacity is timely as demographics put pressure on health services, while in remote areas, patients of all ages can find it hard to get

appointments with specialists.

Medical, teleoperated robotic systems have witnessed tremendous growth over recent years. Their ultimate goal is to provide specialised healthcare services over long distances, effectively eliminating the need for the physician and patient to be present in the same place. If realised, this could greatly impact the quality of life of [patients](#) located in isolated areas where access to specialised medical services is limited, and enable the elderly or disabled retain their independence.

The benefits are legion: access to healthcare, efficient use of staffing resources, reduction of cost and inconvenience, reducing the possibility of transmitting infectious diseases between patients and healthcare professionals, and the list goes on.. Telemedicine is also expected to play a key role in removing barriers to healthcare provision in developing countries, in areas of natural disasters, and war zones where consistent [healthcare](#) is unavailable or there is no time to transport a patient to a hospital.

The EU is doing its part to maximise the benefits of telemedicine through a variety of supported projects: Remote Medical Diagnostician (REMEDI) is just one example.

Long-distance abdominal examination

A prototype of a [robot](#) that can run a physical examination, (using humidity, temperature and force sensors), and pass data back to [healthcare professionals](#) has been tested. Created by the REMEDI project, the robot can be controlled hundreds of kilometers away. It has been developed to go beyond the current telemedical solutions that usually centre around teleconferencing. Specifically, the robot is designed to palpitate a patient's abdomen to observe the stiffness of the internal organs and receive the patient's feedback, as well as performing

an ultrasonographic examination.

Real-world scenarios involving cardiac examination and patient/doctor feedback went into the development of the robot. Besides quality teleconferencing, the robot, placed in a hospital, is equipped with a lightweight and inherently safe manipulator that has an advanced sensorised head. This has an ultrasonic probe as an option; and the remote interface (placed at the doctor's location) is equipped with sophisticated force-feedback, active vision and locomotion capabilities. The force-feedback, stiffness data allows the doctor to 'feel' the patient's abdomen through a specially designed surface mounted on a robotic arm.

The doctor sits in front of three screens: one that shows where the doctor's hand is on the patient, the second allows for direct communication with the patient and the third for ultrasound imagery. All the data combines to allow the doctor to decide if it is necessary to transfer the patient to hospital or if another treatment pathway is desirable.

The robot currently resides in a hospital in Poland but scientists have shown the prototype at medical conferences around the world. They have already been approached by doctors from Australia and Canada where it can take several hours to transfer rural patients to a doctor's office or hospital.

More information: Project website: www.remedi-project.eu/?Home

Provided by CORDIS

Citation: Remote medical diagnostics and treatment can help to ease pressure on Europe's healthcare systems (2017, September 11) retrieved 11 May 2024 from

<https://medicalxpress.com/news/2017-09-remote-medical-diagnostics-treatment-ease.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.